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DR. DRYSDALE'S *Hiſtory of the Yellow Fever at Baltimore, concluded from page* 266.

LETTER IX.

LET us now, Sir, inquire from what ſource the late yellow fever could have ariſen:—I doubt, however, whether I ſhall be able to determine any thing deciſively on this ſubject. The diſeaſe did not become an object of attention, until ſeveral perſons had been attacked with it at the ſame time. It was diſcovered on two places, remote from each other, to which it was confined: viz. *Bowley's wharf* in the town, and *Fell's Point*.

On Bowley's wharf, it appeared at a particular part, extending at firſt to three or four ſtores on each ſide of one of its corners. It became gradually more general, but the wharf was ſoon ſo much deſerted, that it found no objects for its attack. About the end of September, I obſerved but five warehouſes open out of five and thirty.

On the *Point*, a caſe was at firſt obſerved here and there, ſcattered through it; but *Biays's* alley ſoon became the chief ſeat of diſeaſe. From thence its principal courſe was directed eaſtward through —— ſtreet, and when it reached the north-weſt corner of—— and Bond ſtreet, it travelled up the latter a conſiderable diſtance, until it was arreſted by a vacant ſpace of fifteen or twenty yards; formed by a broad gate-way, and an un-

occupied ſtore. It gradually advanced towards town, which was now ſeriouſly threatened with a participation of the wretched fate of the Point, when the occurrence of heavy froſts checked the progreſs of the diſeaſe.

Many caſes occurred through the town; but they originated from communication either with Bowley's wharf or with the Point: to one of theſe two places the infection could be diſtinctly traced.

Whether was the diſeaſe imported, or did it originate from cauſes exiſting among ourſelves? I ſhall endeavour to anſwer this queſtion.

It is the opinion of the celebrated *Lind*, that the yellow fever does not always require the introduction of its ſpecific contagion to give it exiſtence. He aſcribes it to marſh exhalations, as a remote cauſe, called into action by exerciſe, intemperance, &c. The marſhes are influenced by ſeaſon, as in the generation of intermittents, and common autumnal remittents. Hence, it was generated in Penſacola in 1765, and in Cadiz the preceding year, after a hot and dry ſummer. *Cleghorn* obſerves, that the tertian fever of Minorca, wore the form of the yellow fever, when Engliſhmen were its ſubjects. In general the natives of the Weſt-Indies are affected with the common remittent, while foreigners, being expoſed to the ſame cauſes, are attacked with the yellow fever. Even the natives themſelves, after an abſence for a year or two, in a colder climate, are as liable as any foreigner, to be attacked on their return with the laſt-named diſeaſe. Is not this circumſtance more referable to a ſameneſs of cauſes producing different grades of effect, according to the habit of body from climate, &c. than to any other cauſe, which the moſt fanciful hypotheſis can ſupply?

The yellow fever, which appeared in New-York, in 1791, has been aſcribed to cauſes exiſting in that city, from which it originally ſprang. Its appearance in Philadelphia, in 1793, we will not adduce as an additional proof of a domeſtic ſource, becauſe it ſtill remains a ſubject of controverſy. In what manner ſhall we account for the ſporadic caſes of the yellow fever

which occaſionally occur in different places, if it can ariſe only from ſpecific contagion imported from abroad? *Lind* informs us, that he has met with ſuch inſtances even in England, as well characteriſed as the diſeaſe can be; and Doctor *Stewart* of this town, declared to me, that he has ſeen caſes attended with the black vomit and yellow ſkin at Weſt River, near Annapolis. In none of theſe inſtances can we have recourſe to ſpecific contagion to account for the occurrence of the diſeaſe. Are we not informed by *Hillary* and other authors, that the yellow fever frequently exiſts in the Weſt Indies, without any evidence or ſuſpicions of an infectious nature? Does not this inference naturally enſue, that it exiſts at ſuch time independently of any ſpecific contagion?

If we can repoſe confidence in the aſſertions of the moſt reſpectable authors, and believe their opinions to be the conſequence of facts, we cannot deny, that the yellow fever has originated from the common ſource of intermittents and remittents, and does not therefore always require the introduction of ſpecific contagion to give it birth. The late yellow fever, therefore, may have ariſen from cauſes exiſting in Baltimore, and may be accounted for, without the aid of an imported origin.

But why was it confined to particular places—Bowley's wharf and Fell's Point? If it originated from ſome internal ſource, we muſt inquire for its firſt appearance, when its cauſes eſpecially exiſted. Let us examine this queſtion. The firſt caſes of the diſeaſe on the Point were confined to houſes, whoſe cellars were filled with ſtagnant putrid water; its effluvia were ſo envenomed, that if a fly came within its influence, it fell dead upon its ſurface. This was ſo notorious a truth, that it could not eſcape the obſervation of perſons in the neighourhood, who led me to witneſs the immenſe number of thoſe dead inſects floating on the ſurface of the putrid water.

On the 25th of Auguſt, I viſited Bowley's wharf, to inquire into the probable cauſes of its diſeaſed ſituation. None could be diſcovered, except the exiſtence of black, putrid, and offenſive

water, under the floors of thoſe ſtores in which the ſick reſided. This water was from twelve to eighteen inches deep, for there were no cellars on the wharf. Almoſt all, who were firſt affected here, were perſons, who had not long reſided in the ſtores. They, who from long reſidence were inured to the fætor of the place, reſiſted more forcibly its noxious powers. Other parts of the wharf, from which the water, as it collected, drained away into the docks, continued healthy. I believe, that I have remarked in a former letter, that the prevalence of a north-weſt wind for a ſhort time was followed by the indiſpoſition of ſeveral perſons. The wind, as a gentleman who reſided on the wharf, obſerved to me, blew the water out of the docks ſo much, as to expoſe the ſlime to the ſun, which exhaled ſuch offenſive effluvia as to induce diſeaſe.

As to the veſſels arriving from the Weſt Indies, I could deduce nothing ſatisfactory from them. I could not diſcover, that any perſon, ſick of the yellow fever, had arrived among us. The *Triumph* arrived about the laſt of June, with almoſt all her crew indiſpoſed. I ſaw them immediately after their arrival, and Doctor *Coulter* attended the ſick; yet nothing like the yellow fever appeared among them. They quickly recovered, and communicated no diſeaſe to others. Previouſly to this period, a ſchooner arrived from the Weſt Indies, and lay at Bowley's wharf, having on board the clothes of the captain who had died on the paſſage. But from no circumſtance did it appear, that he had died of yellow fever; nor was any other perſon on board ill from the time of the captain's death, to the expiration of a quarantine, which the veſſel was ordered to ride. We may alſo obſerve, that that part of the wharf, at which this ſchooner was a ſhort time moored, was not the firſt ſcene of ſickneſs, nor was it at any period diſeaſed. It is impoſſible to aſcertain any means, by which the yellow fever could have been imported.

Can we not explain the circumſtance formerly mentioned—that the town became more healthy while the Point became more diſeaſed—on natural principles? The chief ſource of the

common autumnal fevers in this *town* is ſome uſeleſs docks and an extenſive marſh, uncovered by the water, when the tide* is not very high. The ſun exhales from theſe places, the cauſe of our intermitting and remitting fevers. But, during the autumn of 1794, the wind prevailed almoſt invariably from the S. and S. E. and thereby kept the docks filled with water and the marſh completely covered. The ſource of miaſmata was thus removed and diſeaſe conſequently became infrequent. *Dazilles*, you have remarked, in his treatiſe on the diſeaſes of the negroes in the Weſt Indies, makes a ſimilar obſervation: the *rainy* ſeaſon, he remarks, is moſt healthy at Cayenne, becauſe the neighbouring moraſſes are then deeply overflowed: and at St. Domingo, the *dry* ſeaſon is moſt productive of diſeaſe; the ſuperfluous water being evaporated, and thoſe degrees of moiſture moſt favourable to morbid exhalations being now induced.

But as to the *Point*, it is a low and flat ſituation; its ſtreets in general unpaved, its alleys very filthy, and the ground around it marſhy in many places. The frequent warm rains were inſufficient to overflow the moſt noxious places, but ſerved to keep them conſtantly moiſt, while the ſun exhaled the poiſonous marſh miaſma. Hence, remittents were unuſually numerous from a very early period, and prevailed in a particular manner in Auguſt, as will appear from the report of the Phyſicians, given in a former letter. The frequent rains produced the ſame effect through every part of the country. Situations high and hitherto healthy, were now diſeaſed with intermittents and remittents. We know, that heat alone is inſufficient to produce bilious fevers; and requires a certain combination of noxious moiſture to become their remote cauſe. "Heat and moiſture," ſays Cullen, in his MSS. lectures, "are required to excite marſh miaſma; for moiſture in cold ſeaſons and climates has not the ſame effect, as is evident, as you recede from the equator to the pole; nor by heat alone, for in the warmeſt

* The tide is not regular as in the Delaware, but is influenced chiefly by the wind.

climates and the warmeſt ſeaſons of other climates, if they be dry, fever is not produced." A very dry ſummer will make thoſe places, which are uſually the ſeats of diſeaſe, healthy, by diſſipating the moiſture, and drying the marſhes; and a very wet ſummer will produce an effect equally good in ſome ſituations, by completely covering with water, the uſual ſources of exhalations, and thereby preventing their occurrence. To this circumſtance, we aſcribe the obſervation of *Wintringham*—that thoſe ſeaſons in England, moſt uniformly rainy, were moſt healthy. But while frequent rains induce the change juſt mentioned, they cauſe places commonly dry and healthy, to become the ſeat of ſickneſs. The ſoil becomes of a marſhy nature, and conſequently, while operated on by a powerful ſun, the ſource of bilious fever. In this manner the late ſituation of the country may be accounted for.

We have now ſeen, that a concurrence of cauſes exiſted, to render not only the Point, but the country alſo, very uncommonly diſeaſed with remitting fevers; and therefore, prepared the way for the appearance of the yellow fever, if the two diſeaſes depended on the ſame cauſes. The yellow fever appears at any ſeaſon of the year, ſays Dr. *Bruce*,* but in its moſt malignant form, when the heat and moiſture are greateſt. Theſe certainly exiſted in an uncommon degree, and the common remittents had not long prevailed, when the other reared its head in places, where the cauſes of bilious fever exiſted moſt abundantly. As the yellow fever became more general, the former gradually vaniſhed. The diſeaſe having thus originated, was ſoon propagated by infection; and after a very ſhort time, it appeared to depend almoſt ſolely, on theſe means for its progreſſive diſſemination.

I may object, however, to ſuch origin of the yellow fever, by inquiring—why, if it can ariſe from domeſtic ſources, it has not hitherto appeared with ſimilar execution in Baltimore?

* See Lind.

That ſporadic caſes have occurred among us, cannot ſurely be denied. One I have ſeen myſelf incontrovertibly characteriſed; nor am I ſingular by any means in this obſervation. Without deducing, however, any particular inferences from theſe circumſtances at preſent, let us direct our attention to two other ſubjects worthy of conſideration; the evident change in our climate—and that particular conſtitution of the atmoſphere, without which, diſeaſes cannot become epidemic.

We have already remarked, that remitting fevers require for their exiſtence, not only a marſhy ſoil, but a great degree of heat alſo to generate the poiſonous miaſmata. A cool north-weſt wind, prevailing frequently and with force, muſt unavoidably impede that putrefactive fermentation neceſſary to produce marſh miaſma, and muſt deſtroy its effects, by weakening its influence. But the warm, moiſt, S. and S. E. wind will increaſe the noxious proceſs, and give additional vigour to its virulence. Let us very briefly review a few circumſtances, relating to the variation of our climate. Formerly, European veſſels, endeavouring to reach our port, would be driven off for weeks by the N. W. wind: At preſent, how unuſual is it, for it to prevail inceſſantly during a very few days. Formerly, the winters were intenſely cold, and the ſnows amazingly deep: At preſent, how mild are the ſame ſeaſons; how extremely infrequent are ſnows of any conſiderable quantity. Formerly, the ſpring was early in its approach, and autumn followed in proportion. The ſummer was fraught with thunder-ſtorms, which, while they agitated, refreſhed and purified the atmoſphere; and the W. or N. W. winds were wont to join their ſalubrious breezes in diſpelling the cauſes of diſeaſe. But, can the annals of our country exhibit a parallel ſeaſon to the laſt? Lightning and thunder were almoſt unknown; inſtead of the invigorating breezes of the weſt, the ſouth or ſouth-eaſt, almoſt inceſſantly poured on us their ſickly enervating blaſts. Inſtead of ſhowers, which formerly brought down health from the heavens, we had frequent rains as impure and unrefreſhing as the "miſts of Lano:" being attended by the laſt-named winds, hot, ſultry,

and oppreſſive. Locuſts were not more numerous in the reign of Pharaoh, than moſquitoes through the laſt few months: yet theſe inſects were very rare only a very few years paſt, when a far greater portion of Baltimore was a marſh.

To this unuſual concurrence of phyſical changes in the aërial and animal kingdoms, let us aſcribe the fact, that the intermittents and remittents, which preceded and followed the yellow fever, differed moſt obviouſly from ſuch as uſually appeared in the ſame ſeaſons of the year. They would not ſubmit to means formerly ſucceſsful in their cure; but were aggravated by thoſe remedies, by which they were formerly ſubdued.

That it requires alſo a particular combination of circumſtances to render certain diſeaſes epidemic, muſt be obvious from numerous facts. The atmoſphere muſt be peculiarly modified to admit this effect; but this peculiar modification is ſtill, in a great degree, involved in darkneſs, although we meet with facts ſufficient to demonſtrate its exiſtence. Why is a rheumatic perſon ſenſible of every ſlight change in the air, which by another cannot be obſerved? Unleſs this peculiar conſtitution of the ſeaſon, as it has been termed by Sydenham, be admitted, how does it happen, that the ſame diſeaſe, will be one year epidemic, and the next ſporadic? How does it happen, that although the ſource of a diſeaſe always exiſts, yet, even the moſt deſtructive and contagious, as the plague, will ceaſe with a ſeaſon, and not rage with equal violence in the next? That this ſtate of the atmoſphere is greatly dependant on cauſes exiſting in cities, appears evident, from contagious fevers being generally confined to them, and loſing their virulence, when carried into the country. Were it not ſo, the plague, having found admittance into a city, could not fail of extending itſelf through every part of a nation. Pringle has remarked, that for want of this diſpoſition of the air, the jail fever raging in the Old Bailey, ſpread itſelf no further. Let us examine the works of Sydenham, and we ſhall find, on this ſubject, truths more uſeful, than Rome

thought the volumes of the Sybil; or the Mahometan contemplates with fond credulity, in the pages of his Alcoran.

This conſtitution of the atmoſphere, aſſuredly prevailed through the late unfortunate ſeaſon; and, combined with the peculiarities of the climate, will explain, why the yellow fever had not exiſted before. To this cauſe, may be juſtly attributed alſo, the deſtructive prevalence of another diſeaſe, ſo nearly reſembling the former in many circumſtances. I mean the ſmall-pox, whoſe extent and mortality during the late months is without an example in the hiſtory of Baltimore. ADIEU!

LETTER X.

In the preſent very limited ſtate of my knowledge, it appears, ſir, probable, that the yellow fever does not require ſpecific contagion to give it exiſtence in particular regions of the world. It may ariſe from the ſources of the common remittent, to which we have always been expoſed; and as our weſtern country becomes more cleared and cultivated, the conſequent variation in our climate will favour the production of the yellow fever. To guard againſt this poſſible contingency, it behoves the police of our towns to give particular attention to their condition with reſpect to cleanlineſs. Numerous nuiſances ſhould be carefully removed; docks ſhould be preſerved free from filth, and neighbouring marſhes converted from the ſources of diſeaſe, to healthy cultivated ground. Eraſmus long ſince aſcribed the frequent plagues of London to its filth; but the Engliſh at that time thought the Danes extravagant and mad becauſe they cleanſed themſelves once in the courſe of a week. Their ideas of delicacy have ſince improved, and they now enjoy that health, which they deſerve. But in ſome of the chief cities of our country, a ſtranger might ſuppoſe putrid docks and ſtagnant waters to be as much the objects of our veneration, as ide-

ots are by the people of Savoy, and mad dogs by the inhabitants of ſome parts of Indoſtan.

I remarked formerly, that as this diſeaſe became more general, it appeared to be almoſt the only one prevailing. Yet from a view of its ſymptoms, as predominating variouſly in different perſons, it would be no difficult matter to multiply its names, until the methodical noſology of Cullen himſelf, ſhould ceaſe to furniſh it with titles. It might be denominated phrenitis; and indeed it was termed for a while by one phyſician "an epidemic phrenitis." Pleuriſy and "febris catarrhalis," were readily applied; dyſentery and cynanche maligna, rheumatiſm from the general pains, and *typhus from muſcular debility*, and a thouſand others were liberally beſtowed on it. But in general, it was denominated "the fever," "that fever," and "that there fever:"—titles which the great Cullen has omitted, but which wiſer phyſicians have adopted. This variety of names would lead to infinite miſchief by thoſe men, whoſe preſcriptions were not regulated by ſymptoms, but by empirical prejudices. It was forgotten, that the character of the diſeaſe continued unchanged, although its ſhades were ſomewhat varied—that it was ſtill a highly inflammatory fever, although ſome of its ſymptoms might appear moſt oppreſſive in different parts of the body; and that it ſtill required the ſame mode of treatment, varied only in proportion to its violence.

Although common remittents were very general, prior to the appearance of the yellow fever, yet they gradually diſappeared, giving place, as it were, to the ſtronger epidemic. By the middle of September, I did not meet with a caſe of any other diſeaſe, beſides the yellow fever, except the ſmall-pox, which continued to prevail in a moſt extenſive and fatal manner. We have been taught by Sydenham to expect, according to the combination of circumſtances, the deſpotic prevalence of ſome one particular epidemic, over every other diſeaſe, appearing in the ſame ſeaſon; and if we had not innumerable facts to reſort to, in corroboration of his aſſertions, we might have inferred ſuch a truth even à priori: For as the particular conſtitution of the

ſeaſon admits the exiſtence of a particular epidemic, it muſt give riſe to certain ſymptoms in preference to that of any others. Theſe ſymptoms, as depending on the ſame cauſes muſt bear a near relation to each other, and characterize the epidemic, as inflammatory or otherwiſe. Should the diſeaſe be at any time of an inflammatory nature, though prevailing only ſporadically, that diſpoſition of the atmoſphere, which renders it epidemic, muſt alſo give additional inflammatory violence to its ſymptoms. Diſeaſes, which in the uſual routine of their appearance, are regarded with no eſpecial apprehenſions as to their event, would now aſſume a more ſerious type, or through defect of the particular circumſtances favouring their exiſtence, they would entirely diſappear. Such as remained muſt bear the general character of the ſeaſon, and from a ſimilarity of ſymptoms, demand a ſimilarity of treatment. Two diſeaſes, therefore, of an oppoſite nature, cannot exiſt epidemically at the ſame time. The more powerful, or that more eſpecially produced and ſupported by its foſtering cauſes, will drive away the weaker, or that which has leſs power for its ſupport. We are not however to expect every manner of diſeaſe totally to vaniſh before the epidemic—"for when I affirm," ſays Sydenham,* "that one epidemic is expelled by another, I do not mean, that the yielding diſeaſe becomes quite extinct, but only leſs frequent."

During the prevalence of the late yellow fever, it is to be remarked, the ſmall-pox did not vaniſh, but retained its ground. But this is not an objection to the opinions hitherto advanced. Is not the yellow fever, a diſeaſe highly inflammatory? So is the ſmall-pox. Was this remitting fever more inflammatory than uſual, from the particular conſtitution of the ſeaſon? So was the ſmall-pox. As an inflammatory fever, were not the yellow fever and theſmall-pox the ſame diſeaſe, with particular ſymptoms differently modified? And, therefore, would

* Wallis's Edition, page 145.

not that cauſe, which increaſed the violence of the one, augment the vehemence of the other? And if one general power prevailed, whoſe influence gave riſe to ſome moſt characteriſtic ſymptoms, ought we not to expect it to reign equally over both diſeaſes? In fact, the two diſorders were accompanied with ſymptoms common to them both, and, had the eruption attended the yellow fever in place of a yellow ſkin, or vice verſa, they might have generally been claſſed under the ſame name. Hæmorrhages attended both, and very frequently, the ſoreneſs or pain in the epigaſtric region, was as troubleſome in the one as in the other. That particular ſymptom, which we have formerly quoted from ſome authors—the dangerous diarrhœa occaſionally accompanying the cloſe of the yellow fever, was common in the ſmall-pox, and I am informed, proved fatal in ſeveral inſtances. It is unneceſſary to continue a parallel of ſymptoms, as it would be almoſt a recapitulation of what I have formerly written

If the moſt oppreſſive ſymptom reſembled dyſentery, it yielded only to the means which ſucceeded in the more common form of yellow fever. The ſame obſervation applies to its appearance under the form of ſore throat. It clothed itſelf in the garb of gaſtrodynia and tetanus, which obſtinately oppoſed every mode of relief, until the general plan of cure hitherto deſcribed, immediately overcame them. As the ſeaſon advanced, and its conſtitution became changed, the yellow fever diſappeared, and gave room for the return of ſuch diſeaſes, as uſually prevail in that ſeaſon.

The yellow fever, evidently proved contagious in Baltimore in many inſtances. Some families at the Point avoided it, by carefully precluding all communication with the ſick. Veſſels alſo, preſerved their crews in health, by removing to a diſtance from the wharf, and preventing the mariners from going on ſhore. But, as ſoon as one affected perſon came on board, he quickly infected all, or the greater part of the crew. One man, contracted the fever on ſhore, and carried it on board the ſhip Phœnix, whoſe crew was previouſly in good health. He laid ill in the

cabin and died. The man, who nurſed him, caught the diſeaſe, and communicated it to the mariner, who attended him in his illneſs. The latter, went forward, and by lying ſick one night in the hold among the remaining ſailors, communicated the fever to the whole crew. Five died out of twelve. The captain of the Swediſh ſhip Reſolution, preſerved the health of all his men, by preventing their communication with the ſhore: but venturing there himſelf in the middle of September, he caught the diſeaſe, and carrying it on board his veſſel, communicated it to his attendant before he died. It paſſed thus, from one to another, till almoſt all the crew became diſeaſed. I believe, ſeven of them died.

Even in the town, every precaution ſometimes failed in obviating the effects of contagion. I will mention only one or two inſtances. Mr. Ogle, by ſitting a ſhort time on the third of October, with a man, who died in as healthy a ſpot as any that Baltimore affords—(in Old Town) caught the fever, and was ſeveral days in imminent danger of loſing his life. On the fifth, Dr. Heineck's boy died; he contracted the diſeaſe, by nurſing a ſick man in town, a part of one night only. Mr. Sheerer died on the ſame day: a young man, William Murphy, who nurſed through one night, took the diſeaſe on the evening of the ſixth, and died before noon, the following day.

I have had an opportunity of knowing but one or two inſtances of its communication in the country. Mr. C———, a country gentleman of great reſpectability, informed me, that he had contracted the diſeaſe in town by ſitting two hours by a ſick man, and communicated it to ſome of his family. One of his children died.

Mr. W———d, formerly a ſtudent of medicine in this town, contracted the diſeaſe on the Point, and going home, on the eaſtern ſhore of this ſtate, communicated it to ſome of his family; himſelf and his couſin fell the victims of the fever.

The number of deaths in Baltimore by the fever, amounted to nearly three hundred and ſixty. ADIEU!

Baltimore, Dec. 1794.

Dewees' Obſervations on DR. DENMAN'S APHORISMS, *on the Uſe of the Forceps.*

To the Editor of the Philadelphia Medical Muſeum.

SIR,

I SEND you a few obſervations on ſome of the Aphoriſms of Dr. Denman, on the uſe and application of the Forceps. My inducement to this, has been, a conviction long felt, of their imperfection, contradiction and ambiguity. I have not attempted to remedy theſe defects; but have, I truſt, from a careful examination of them, pointed out what appeared faulty, and given ſatisfactory reaſons for my diſſent. If they ſhould not appear in the ſame light to others, who may have peruſed them, I ſhall be happy to have my own overſights pointed out, and will thank him who may ſet me right, where I wiſh not to be wrong.

Dr. Denman has long, and juſtly, ranked among the firſt in this department of medicine. The preſent attempt is not with a view to diminiſh that fame, by calling in queſtion, without reſerve, his talents or his doctrines; it is deſigned merely to diminiſh the influence of precepts too limitedly conceived, and too negligently expreſſed, in a ſmall work, entitled "Aphoriſms on the application and uſe of the Forceps," &c. Perfection falls not to the lot of man; and Dr. Denman himſelf acknowledges, that caſes for the uſe of Forceps occur but rarely in any one man's practice; he therefore did not contemplate a perfect ſyſtem, in his directions for their uſe. However ſenſible he may have been, of the imperfection of his work, from the conſiderations juſt mentioned, the public had a right to look for principles that had been well aſcertained, and directions without ambiguity or confuſion. Situated as Dr. Denman has been, we cannot ſuppoſe him ignorant of the many improve-

ments that have been made in midwifery on the continent of Europe; but we fear, that that prejudice, ſo injurious to the advancement of ſcience, has eit' 'r made him overlook, or not ſufficiently appreciate, the merits of ſome of the practitioners abroad; how elſe ſhall we account for the entire neglect of the principles and practice of Levret and Baudelocque, in the uſe of theſe valuable inſtruments? Nay, his own countryman Smellie, ſeems to have experienced the ſame fate, ſince he, many years ago, eſtabliſhed their uſe and powers much more certainly, than the Doctor appears to think they poſſeſs at this day: be this as it may, I have nothing to do with the cauſe of failure or imperfection; and am only to judge of the work as it ſtands; but cannot, however, withhold ſaying, I think its utility very limited or queſtionable, and its chance of doing miſchief, great. Knowledge of every kind muſt be progreſſive; but with a view to this, errors muſt be pointed out, or remedied; otherwiſe it becomes ſtationary, or perhaps retrograde. It was with a hope, that one of theſe purpoſes would be effected, that the preſent ſtrictures were made; and that, by pointing out error, I ſhould, however remotely, or indirectly, diminiſh ſome of the difficulties or embarraſſments, attending the uſe of theſe truly uſeful inſtruments; and alſo, leſſen ſome of the prejudices entertained againſt them.

The indiſcriminate uſe of inſtruments cannot be too ſeriouſly deprecated; and with this view, Dr. Denman has laid it down as a fundamental principle, "that no inſtruments are to be uſed in the practice of midwifery; the caſes in which they are uſed, are, therefore, to be conſidered merely as exceptions to this rule."* From this conſideration alone, we ought to have the moſt clearly defined caſes, where, and when to employ them, as well as the moſt preciſe directions for their application; neither of which ends are anſwered, by the Aphoriſms of Dr. Denman. For it muſt be again declared, they ill define the caſes where they are neceſſary, and vaguely direct the mode of application. After having ſaid thus much, I will give my reaſons for my

* Aph. i. p. 13.

diſſent. With this end in view, I will proceed regularly with the book.

The Doctor begins with an arrangement of labours; which he claſſes under four general heads, viz. "I. Natural. II. Difficult. III. Preternatural. IV. Anomalous or Complex."

"Claſs I. Natural Labours."

Character. "Every labour in which the proceſs is completed within twenty-four hours; the head of the child preſenting, and no adventitious aid being required."

Many objections might be made to this character of Natural Labour, which is taken from time and the preſenting part; but as this is not a material point, and as ſome objections may perhaps be made to any definition that may be given, I ſhall paſs this without comment; only obſerving, I cannot help preferring Baudelocque's, which makes all labours natural, that do not require the interference of the Accoucheur.

I cannot, however, ſo ſilently paſs by his "Varieties" of Natural Labour: he reduces theſe to four, viz.

"1. The face inclined towards the ſacrum."

"2. The face inclined towards the oſſa pubis."

"3. The head preſenting with one or both arms."

"4. The face preſenting."

In this arrangement, we not only find incorrectneſs, but ambiguity. Incorrectneſs—ſince, with the preſentation of the head, that of the face is included; and alſo, thoſe caſes, in which the vertex preſents originally to the pubes or to the ſacrum, are omitted. Theſe are not diſtinctions without differences; for I hold them important in a work like this, as will be more fully ſhewn in the ſequel. Ambiguity—ſince we are at a loſs to tell what ought to be meant by the head of the child. It has been uſual with moſt authors when ſpeaking of head preſentations, to mean the vertex as the preſenting part;* and they have for the moſt part, carefully diſtinguiſhed between head and face caſes. This

* "That part of a child which deſcends loweſt into the pelvis, is to be eſteemed the preſenting part." Aph. p. 6.

diſtinction is founded on practical neceſſity, and it is one that the ſtudent or young practitioner ought ever to bear in mind, as their mechaniſm, and for the moſt part their treatment, are eſſentially different. Indeed, a little after, the Doctor appears to concede this opinion, ſince he makes a face preſentation a cauſe of difficult labour.* It is very poſſible, it is true, that a labour may, agreeably to the Doctor's definition, be natural when the face preſents, but this can only happen from the concurrence of ſeveral cauſes, which, but too frequently are abſent: for the moſt part they are productive of difficult labour, and not unfrequently are obliged to be made preternatural.

"CLASS II. DIFFICULT LABOURS."

"*Character.* Every labour in which the proceſs is prolonged beyond twenty-four hours, the head of the child preſenting."

The ſame objections may be made to this definition as to the former; we find in it the ſame want of preciſion as we noticed in the other.

We might diſpute perhaps with great propriety, the agency of ſome of the cauſes he has enumerated of difficult labours; ſuch as the partial action of the uterus; the imperfect diſcharge or dribbling of the waters; the ſhortneſs of the funis, &c. but, as theſe are leſs important miſtakes, than thoſe propoſed now for conſideration, I ſhall paſs them by, and immediately proceed with the obſervations on the "directions for, and admonitions in, the application and uſe of the forceps."

"The intention in the uſe of the forceps is, to preſerve the lives both of the mother and child, but the neceſſity for uſing them, muſt be decided by the circumſtances of the mother alone."† I conſider this aphoriſm very deficient, or perhaps more properly ſpeaking, very faulty; it is acknowledged that, "the intention in the uſe of the forceps is, to preſerve the lives both of the mother and child;" but we are immediately after told, "the neceſſity for uſing them, muſt be decided by the circumſtances of the mother only": did we always literally obey this

* P. 11. ver. 6. † Sect. i. Aph. iv. p. 13.

precept, it would be impoſſible to fulfil the indication for which the forceps were preſcribed. It is a glaring and palpable ſoleciſm, indeed, we had nearly ſaid Iriſhiſm; for it ſeems to declare, you are to ſave by the forceps both mother and child; but if there is no "circumſtance" on the part of the mother that would require their uſe; that is, (as I underſtand it) if ſhe herſelf is in no danger, or can eventually, no matter how long, expel the child, you muſt not uſe them, however important they may be to the ſalvation of the child. Need it be ſaid, if this advice is followed, it would prove the deſtruction of very many lives? for inſtance, when the head is very far advanced, and the vertex is about to emerge from under the arch of the pubes, but is retained there, by the extraordinary ſize of the child's head, by its uncommon oſſification, or the unuſual rigidity of the external parts; ought we to run the riſk of loſing the child by withholding the forceps, becauſe the indication is not taken from the circumſtances of the mother? Or, let us ſuppoſe the body and ſhoulders of the child to be delivered, and its head to be retained at the inferior ſtrait; in this ſituation, it would inevitably periſh were it to continue long, nay, but a ſhort time: ought we to abandon the poor infant to its fate, becauſe its head may have been either poſitively or relatively too large, to be immediately expelled by the common efforts of the mother? or becauſe, there was no "circumſtance" on the part of the mother, that required this immediate interference? The uſe of the forceps under "circumſtances" of this kind, has been conſidered by Baudelocque, as a valuable improvement in midwifery, and he does not fail giving the very juſtly merited praiſe to Smellie for the diſcovery.

Aph. 5. "It is meant, when the forceps are uſed, to ſupply with them the inſufficiency, or want of labour pains; but ſo long as the pains continue, we have reaſon to hope they will produce their effect, and ſhall be juſtified in waiting."

This aphoriſm, like the one juſt noticed, would lead the young practitioner into great error; an error, on which the life of both mother and child is ſtaked. By this aphoriſm, we are

authoriſed to wait as long as pains continue, before we uſe the forceps ; than which, nothing can be more dangerous ; by doing this, we loſe time truly precious to the individuals concerned. How many caſes are there, where the forceps might not only be uſed with ſafety and advantage, but where they are truly indiſpenſable, yet, where pains continue, nay even continue with violence, but unavailingly, either from the bad ſituation of the head ; from abſolute or relative narrowneſs of the pelvis ; or uncommon rigidity of the ſoft parts : under "circumſtances" like theſe, we are, through falſe principles, to ſubject the woman to all the conſequences of the long and violent preſſure of the child's head on the ſoft parts within the pelvis, and thereby hazard inflammation, ſuppuration or gangrene ; while we expoſe the child to all the evils ariſing from its head being long and violently compreſſed, by the reiterated contractions of the uterus. Yet here we are forbidden the aid of the only means, by which the labour can be terminated with ſafety to mother and child, or at leaſt, we are told it will be juſtifiable to wait, maugre the accidents that may enſue. Beſides, the Doctor has in one member of this aphoriſm declared, the "forceps are to ſupply the inſufficiency of pains ;" if this means any thing, it muſt be underſtood, that, where pains are unavailing, though they ſtill continue, we are to have recourſe to other means, than the common or natural agents of delivery ; for I preſume, the ſufficiency of pains ought to be determined by their effect, rather than by their apparent force. Yet immediately after, we are told "ſo long as the pains continue, we have reaſon to hope they will produce their effect, and ſhall be juſtified in waiting." The inexperienced practitioner would be in doubt what plan to purſue ; the timid one, would be lulled into a ſecurity fatal to his charge.

What would be the conſequence of this indeciſive conduct, in caſes of convulſions on the acceſſion of the pains? Death moſt probably to both mother and child; for we have no hope in many caſes, but in the ſpeedy termination of the labour, and the forceps are frequently the only means, by which this end

can rationally be obtained. What would be the reſult, did we excluſively rely on the hope, that, the pains would eventually "produce their effect" when the head was badly ſituated at the inferior ſtrait, and where, of courſe, the proper relation between the head and pelvis does not obtain? Ought we to abandon the unfortunate mother to the unavailing efforts of nature, and become the idle ſpectators of her fruitleſs endeavours, becauſe ſhe is ſtill able to continue them; or ought we promptly to ſtep in to her aid, employ the forceps, reſcue the devoted child, and ſave perhaps a valuable mother? Inſtances might be multiplied, in which it would be equally improper to truſt to "time and patience"* as remedies for difficult labours; but theſe for the preſent will ſuffice.

Aph. 9. "A rule for the time of applying the forceps has been formed from this circumſtance; that, after the ceſſation of the pains, the head of the child ſhould have reſted ſix hours in ſuch a ſituation as to allow the uſe of the forceps."

To wait ſix hours in many inſtances, as propoſed by this aphoriſm, would be waiting a time at the expiration of which, our efforts would no longer be uſeful or availing. In convulſions, hemorrhagies, and faintings, the moſt prompt aid is frequently required; to wait in caſes like theſe ſix hours, is ſometimes to ſeal the doom of our patient. It may, perhaps, be ſaid, it is to be underſtood, we are to wait ſix hours, only when no threatening ſymptom attends; this perhaps may be the Doctor's meaning, but it muſt be confeſſed it is not expreſſed. But if we even admit this, which, by the bye, I conſider entirely gratuitous, we ſtill have to complain of great want of preciſion in this aphoriſm; it is regulating the accoucheur's conduct by time inſtead of circumſtances, which, I think no ſmall fault: beſides, "threatening ſymptoms" may be conſidered as a very indefinite direction; for what one might conſider as ſuch, another would not; the nature of thoſe circumſtances ought to have been clearly pointed out, where the Doctor would have us act, and where

* Page 11. Art. i.

we might ſafely, agreeably to his opinion, be idle. But this he has not done, and he leaves our conduct to be regulated by a definite number of hours. It does not appear in any inſtance with Dr. Denman, either in his introduction to midwifery, or in the work before us, that he conſiders the long preſſure of the child's head on the ſoft part of the pelvis, as entering into, or making even a part of, an indication for the uſe of forceps. Whence this happens, we cannot pretend to determine; but certain it is, many others whoſe reputation is equally high, and on whoſe judgment at leaſt an equal value ought to be ſet, have viewed this matter in a very different light. It has with ſome been conſidered, as an indication excluſively ſufficient, for having recourſe to adventitious aid; fearing much more, the ill conſequences of delay, than any miſchief that might enſue, from what Dr. Denman might think a premature application of the forceps.

It is true, the Doctor endeavours to obviate the objections which he foreſaw muſt be made to this rule, by framing Aphoriſm 10. "But this, and every other rule, intended to prevent the raſh and unneceſſary uſe of the forceps, muſt be ſubject to the judgment of the perſon, who may have the management of any individual caſe." But to whom is this aphoriſm directed? Is it not giving a diſcretionary power to thoſe who are ſuppoſed not to have ſufficient knowledge to direct it? for this work, agreeably to his own declaration, was deſigned "for ſtudents," —and they, unfortunately, may be called to caſes, before they poſſeſs that judgment he inclines to rely on. They, in vain would ſeek reſource from this work; they muſt turn from it with indeciſion and embarraſſment. In a work ſo profeſſedly didactic, the plaineſt and moſt undeviating rules, ought to have been laid down; to rely on the judgment of the practitioner is not teaching, it is ſuppoſing the poſſeſſion of a knowledge, this work ought to have been capable of giving; inſtead of obtaining information, we are ſuppoſed already not to ſtand in need of it; inſtead of being enlightened we are bewildered; on the one hand, we are cautioned againſt the uſe of the forceps, vaguely

and injudiciouſly; on the other, we are warned againſt the too long delay of them, without being clearly inſtructed where it may be proper to employ them.*

Aph. 13. "The lower the head of the child has deſcended, and the longer the uſe of the forceps is deferred, the eaſier will in general their application be, the ſucceſs of the operation more certain, and the hazard of doing miſchief leſs."

How ill does this aphoriſm comport with the one juſt quoted? This rule not only reſtricts us to very narrow limits in the uſe of the forceps, but decides without ſufficient caution, that the longer they are deferred the better. One of the greateſt improvements that midwifery has received for this laſt century, has been perhaps, the great perfection to which the forceps have been brought, and the certainty to which we have arrived in their application; together with the knowledge of their utility and ſafety, in almoſt any ſituation of the head within the pelvis. Levret, Smellie, Baudelocque and others, bear teſtimony in their favour, under circumſtances not dreamed of by their predeceſſors, or thought impoſſible by ſome of their cotemporaries. Before theſe inſtruments underwent the valuable changes, effected by the authors juſt mentioned, and when the pell-mell mode of application was only purſued; this aphoriſm, might have been adopted in its fulleſt latitude, without perhaps ſubjecting our patients to worſe conſequences than might have reſulted, from the forceps themſelves. But when we find them in the ſtate of perfection they now are; and when we reflect on the certainty of the laws by which their uſe and application are directed, I cannot withhold ſaying, this aphoriſm teaches not only a falſe, but a dangerous doctrine. I do not heſitate to agree with Dr. Denman, that "the longer the uſe of the forceps is deferred, the eaſier will in general be their application," but I cannot by any means concede "that the ſucceſs

* Aph. ii. p. 15. "Care is alſo to be taken that we do not, through an averſion to the uſe of inſtruments, too long delay that aſſiſtance we have the power of affording with them."

of the operation" will be " more certain, and the hazard of doing miſchief leſs." In contemplating the ſucceſs of an operation, we ought certainly to conſider, whether it is performed at a time, and in a manner that will the moſt certainly fulfil the objects for which it was intended. Let us ſee how far the doctrine inculcated by this aphoriſm can be juſtified by this rule. The end propoſed in the uſe of the forceps is, to ſave both mother and child.* To fulfil this intention, the aphoriſm tells us, the longer their uſe is deferred, the more ſucceſsful will be their operation, and the danger of doing miſchief leſſened. Did we follow this advice, we ſhould not apply the forceps until the head was about to emerge from under the arch of the pubes, in caſes where the pains propel it from time to time; and this confeſſedly would be delaying their uſe to the greateſt poſſible extent we can ſuppoſe; but to have deferred them until this time, would be contrary to the Doctor's opinion of their uſe, ſince he ſays, aphoriſm 17. p. 16. " when the head has emerged under the arch of the oſſa pubis, the uſe of the forceps can very ſeldom be required;" here we find the Doctor at variance with himſelf: but, let us ſuppoſe the head has not been made, by the repeated efforts of the uterus, to paſs through the inferior ſtrait, but merely to have arrived at it, and is there detained by ſome cauſe or other; we muſt now delay the uſe of the forceps, until the woman's ſtrength is exhauſted in vain efforts to propel the head; until inflammation or gangrene has enſued; or, until the child loſes its life; becauſe we are taught to believe, that " the lower the child has deſcended, and the longer the uſe of the forceps is deferred, the eaſier will in general their application be, the ſucceſs of the operation more certain, and the hazard of doing miſchief leſs." What danger can enſue under circumſtances like theſe, from the uſe of the forceps; that will not be exceeded by their too long delay? Beſides, women are ſubject to a variety of diſeaſes during labour, that leave no reſource but in the ſpeedy application of the forceps; ſuch are convul-

* Aph. iv. p. 13.

ſions, ſyncope, floodings, ſtrangulated hernia, &c.—in caſes of this kind, a moment's delay might be fatal. It perhaps may be urged, that, under circumſtances ſo imperious, we have a choice of remedies, and, that turning would be the preferable practice. This certainly is the caſe ſometimes, and would perhaps be always, could we command the conditions neceſſary for its ſucceſs; but this is impoſſible, and we are left with no alternative but the forceps. For when the head has eſcaped from the orifice of the uterus, turning muſt not be thought of; and when the waters have been long diſcharged, it is for the moſt part impracticable. To obey this aphoriſm then, is to wait until the forceps are for the moſt part uſeleſs;* or if we do not wait until they are uſeleſs, we employ them with uncertainty and hazard, or in waiting for the head to paſs to a certain part of the pelvis, that we may employ them with more certainty and ſucceſs, we ſubject both the woman and child to danger by ill-timed delay.

From what has been ſaid, it would appear, that, very often by delay, we ſhould not fulfil the object propoſed in the operation; namely, the ſafety of both mother and child; and by it, loſe the beſt poſſible time for performing it.

It will, perhaps, be ſaid, in a work of this kind, ſome general rules are all that is to be expected, and that the operator muſt ſupply its defects. I did not expect rules that would apply to every poſſible caſe, but had a right to look for thoſe, that would prevent any very great error in their application. In this I have been diſappointed, and am not ſingular, as it has not been an infrequent thing to hear theſe aphoriſms complained of.

Aph. 14. "The forceps ſhould always be applied over the ears of the child; it muſt, therefore, be improper to apply them when we cannot feel an ear."

I cheerfully ſubſcribe to a poſition entertained in this aphoriſm; viz. the forceps ſhould always be applied over the ears

* Aph. xvii. p. 16.

of the child;" but can by no means conſent to the deduction, that, "it muſt therefore, be improper to apply them when we cannot feel an ear."

There are many caſes, wherein it would be proper to apply the forceps, where an ear cannot poſſibly be felt; for inſtance, firſt, when the head has not completely paſſed the ſuperior ſtrait, and before it has eſcaped from the orifice of the uterus, and, more eſpecially, when this viſcus is contracted firmly round the head; ſecondly, when the head is wedged diagonally in the inferior ſtrait, owing either to the abſolute or relative want of ſize in the pelvis; thirdly, when the head preſents originally at the ſuperior ſtrait with the vertex to the pubes, and the anterior fontanelle or bregma to the ſacrum; fourthly, where the anterior fontanelle or bregma, preſents originally at the ſuperior ſtrait, towards the pubes, and the vertex towards the ſacrum; fifthly, where either of theſe preſentations have paſſed the ſuperior ſtrait in the direction juſt mentioned, and are arrived at the inferior ſtrait; ſixthly, and laſtly, where the vertex or forehead are about to emerge from under the arch of the pubes. In all theſe caſes, it is impoſſible to feel an ear by a common examination, (which is the doctor's criterion of the manageableneſs of the caſe) yet, in either of them, the forceps may be excluſively indicated. What could have led Dr. Denman to the framing of this aphoriſm is difficult to ſay; certain it is, it has neither the advantage of ſimplicity, nor the truth of experience to recommend it.

Let us ſuppoſe a caſe in which the ear cannot be felt, not becauſe it is out of reach of the finger by a "common examination," but becauſe there is not room for the finger to paſs, (this let it be remembered is not a gratuitous caſe, for Dr. Denman himſelf admits it*); what muſt be done in this inſtance?

* "It muſt, therefore, be improper to attempt to apply them before an ear can be felt, either becauſe the head is too high to allow us to reach that part, or becauſe it is ſo cloſely locked in the pelvis, that there is not room to paſs the finger for that purpoſe, between the head of the child and the pelvis." Introduction to Midwifery. p. 134.

It would ſeem, the Doctor did not conſider the difference between the thickneſs of the finger and the blades of the forceps, or that they could very

every conſideration and circumſtance on the part of the mother and child call loudly for immediate aſſiſtance; this can only rationally be given by the forceps; but they muſt not be uſed; Why? becauſe truly, an ear cannot be felt. Thus, then, by a careleſs diſtinction, or an unneceſſary and injurious caution, the lives of both mother and child, are to be put in jeopardy. I deem this aphoriſm of ſufficient importance, farther to obſerve, that it is not only defective for the reaſons already given, but alſo, becauſe it leads the pupil or young practitioner into a very important error; it obliges him to determine the ſituation of the head by the ear, and makes him place his dependence for this knowledge on this part; a mode of acquiring this very neceſſary information, that is not only very inconvenient, but is alſo very limited; nay, it has been already obſerved, it is impoſſible ſometimes to obtain an idea of its ſituation by this part, ſo that he is either obliged to abandon the uſe of the forceps, and truſt to the efforts of nature, or have recourſe to the crotchet; or he applies them at the riſk of embracing the greateſt diameter of the head, or diagonally. In the firſt inſtance, all the force he could apply, would not be ſufficient to deliver the head; and in the ſecond, they would either not lock, or elſe would ſlip, if made to do ſo by force: in either way the accoucheur muſt be foiled, and the woman and child ſuffer. I ſhall diſmiſs this aphoriſm, with a recommendation to the pupil or young practitioner, to depend upon the fontanelles and ſutures, for a knowledge of the ſituation of the head; they can always be felt, and, if carefully examined, will never miſlead.

Having thus noticed the principal aphoriſms which relate to the employment of the forceps; I ſhall now proceed to thoſe which relate to the mode of application. Before we proceed,

readily paſs when the finger could not; or elſe he knew of no other method than the ear, to determine the ſituation of the head, and would not run the riſk of being foiled with them, ſince he could not determine to what part of the pelvis they were directed. What is to be expected, under circumſtances like theſe? Either that the woman muſt be allowed to exhauſt herſelf; the child periſh before ſhe can deliver herſelf; or have recourſe to the crotchet.

however, with this examination, it ſtrikes me as neceſſary to lay down a few rules, the obſervance of which, I conſider as indiſpenſable in the application of the forceps. By proceeding in this way, I ſhall be ſaved needleſs repetition; and it will at the ſame time, ſerve to ſhew at one view, how very deficient Doctor Denman's rules are for the application of the forceps, and how very inadequate to the end propoſed.

I ſhall not enter into a minute deſcription of the forceps as we find them at the preſent day, as they all preſent the ſame general character. They differ more in length than in form, and may ſafely be divided into, the Engliſh ſhort, and the French long forceps. Theſe differences in length, however, make none that is material in their application, as the ſame general rules apply with equal propriety to both.

I ſhall deſcribe the forceps as conſiſting of two blades with handles; as having a ſuperior concave, and an inferior convex edge, of having a lateral or external convex, and a lateral or internal concave ſurface. The blades are diſtinguiſhed into right and left hand blades. Having given this outline of the forceps, I will proceed with the rules for their application, &c.

Rule I.

The forceps are always to be applied over the ears of the child, but in ſuch a manner, as to embrace the head rather diagonally than perpendicularly; that is to ſay, the forceps muſt traverſe the head nearly in the direction of a line, if it were drawn, from the vertex to the chin, and not in the direction of a line drawn from the baſe of the ſcull to the ſummit of the head.

Rule II.

They are to be applied in ſuch a manner as, that their ſuperior concave edge may always come under the arch of the pubes, when the head is about to emerge from the pelvis.

Rule III.

Each blade of the forceps muſt have its definite ſituation in the pelvis, that rule the ſecond may never be infringed.

Having laid down theſe ſimple, but important rules, I ſhall examine the Doctor's, and ſee how far they will accord with them.

" The following rules are given," ſays the Doctor, " on the preſumption that the head of the child preſents, with the face inclining or verging towards the hollow of the ſacrum," &c.

Sect. II. p. 17.

1. " Carry the fore finger of the right hand to the ear of the child."

This rule may be complied with wherever it may be practicable. I have already remarked how ſeldom this is the caſe.

2. " Then take the blade of the forceps to be firſt introduced, by the handle, in the left hand, and conduct it between the head of the child and the finger already introduced, until the point reaches the ear."

The rules we have juſt mentioned, are, agreeably to Dr. Denman's avowal, " predicated on the preſumption that the head of the child preſents with the face inclined or verging towards the hollow of the ſacrum." The head, after it has arrived at the inferior ſtrait, may be ſo ſituated, as, that the face may have two inclinations towards the ſacrum, which are eſſentially different. Firſt, it may be ſo ſituated as, that the vertex ſhall be behind the left foramen ovale, while the face will nearly correſpond with the right ſacro-iliac ſymphyſis ; or, ſecondly, it may be ſo placed, as, that the vertex will be behind the right foramen ovale, while the face will be towards the left ſacro-iliac ſymphyſis. Theſe ſituations of the head are by far the moſt frequent which occur in the human ſubject. The firſt ſtep neceſſary, that the forceps may be applied with facility and ſuc-

ceſs, is, to determine which of the two it may be; after having ſatisfied ourſelves on this head by a careful examination of the fontanelles and ſutures, we are to take care that rule the third is complied with, that we may fulfil rule the ſecond.

Now let us ſuppoſe the head to be ſituated after the firſt manner; then let us ſee what rules will be neceſſary that the forceps may be properly applied; and then attend to the rules of Dr. Denman, and determine how far they will anſwer the end propoſed.

In the propoſed ſituation of the head, the right ear of the child will be rather to the right of the ſymphyſis pubis, and the left, towards the left ſacro-iliac junction, the face conſequently will be towards the right ſacro-iliac junction. That rule the firſt may be ſtrictly complied with, the right hand blade of the forceps muſt be nearly behind the ſymphyſis pubis,* and the left hand one nearly before the ſacrum,† while the handles muſt be much inclined towards the left thigh of the mother. This inclination of the handles is eſſential to the ſucceſs of the operation; (not a word of which is mentioned by Dr. Denman) for if we do not attend to this, we muſt neceſſarily ſeize the head in the direction of its perpendicular diameter, inſtead of its oblique. If we ſeize the head after the firſt manner, we ſhall be in danger of making the face recede too far from the breaſt, and thus make the head preſent its greateſt diameter parallel with the ſmalleſt diameter of the inferior ſtrait: and in order that we may embrace it after the ſecond, and proper manner, the rule of inclining the handles towards the left thigh of the mother, is indiſpenſable.

Let us now examine what would be the conſequence did we follow Dr. Denman's rules, in a caſe of this kind. Firſt, we ſhould embrace the head in its perpendicular diameter;‡ ſecondly, we ſhould make the convex edges of the forceps come un-

* But rather to the right of it. † But rather to the left portion of it.

‡ For we are directed to carry the firſt blade until the lock reaches the external parts near the inferior edge of the oſſa pubis, while the ſecond is to be carried till the lock reaches the perinæum, or even preſſes it a little backward. Aph. vi. vii. p. 18.

der the arch of the pubes,* if it were poſſible to make the head emerge from there; or thirdly, ſhould we not bring the convex edges in this manner, we ſhould be obliged, were we to bring them otherwiſe, to make the face of the child come uppermoſt.

The preſentation we have choſen to illuſtrate our point, is by far the moſt frequent of the two mentioned; but Dr. Denman's rules can only be uſeful in the ſecond. Beſides, there are other ſituations of the head, in which theſe rules would apply with even leſs propriety. I mean, where the ears of the child are turned towards the ſides of the pelvis. I have purpoſely left the examination of two aphoriſms, (which in order, ſhould have come before,) until the preſent time, as I can at one and the ſame time point out their fallacy, and expoſe the imperfection of his rules for the application of the forceps.

Dr. Denman, in aphoriſm xvi. p. 16. ſays, "The ear of the child that can be felt, will be found toward the oſſa pubis, or under one of the rami of the iſchia," and in aph. xvii. that "the ears are not turned to the ſides of the pelvis, till part of the hind head has emerged under the arch of the oſſa pubis, when the uſe of the forceps can very ſeldom be required."

I have already adverted to Dr. Denman's omiſſion of ſeveral material preſentations of the head, and ſpecified two, deemed important; I ſhall again inſiſt on this here, and ſhow that both the above aphoriſms are far from practical truth. The two inſtances of preſentation I noticed ſome time ſince, as not having a place in Dr. Denman's varieties of natural labour, were, firſt, when the vertex or poſterior fontanelle is to the pubes, and the anterior fontanelle or bregma is to the ſacrum; and ſecondly, where the bregma is to the pubes and the vertex to the ſacrum. In theſe preſentations the ears are originally placed toward the

* For we are directed to place the left hand blade behind the pubes, and the right hand blade between the child's head and perinæum, conſequently in this preſentation, the concave edges of the inſtruments will be towards the face of the child. Aph. ii. 7.

ſides of the pelvis, and the head advances with them in this way, until it arrives at the inferior ſtrait; conſequently, in neither of theſe caſes can the ear be felt "under the rami of one of the iſchia," and are, therefore, turned toward the ſides of the pelvis, before a part of the hind head has emerged from under the arch of the pubes. In labours of this kind, where the forceps may be neceſſary, what information for their uſe, can be derived from the aphoriſms?

The other aphoriſms belonging to this ſection are commonplace, but proper always be kept in remembrance; we have, therefore, only noticed thoſe we deemed eſſential. Thoſe of ſection III. though ſubordinate to the ſecond, fourth, and ſeventh, of ſection II. are judiciouſly conceived and well expreſſed.

I will now diſmiſs this ſubject, which has already far exceeded the bounds I had preſcribed to myſelf; if, ſir, they come within your plan, they are much at your ſervice.

I am, ſir, yours reſpectfully,

WILLIAM DEWEES.

November 13th, 1804.

Obſervations on Dyſentery. By the late FRANCIS BOWES SAYRE, M. D.

AT length, my dear Sir, I have found time to attend to your requeſt. It has, indeed, often occurred to my remembrance; but ſince I laſt had the pleaſure of ſeeing you, the greater part of my leiſure hours have been ſtolen from me in a manner which, though I cannot deſcribe it, appears to have been unavoidable: even now, I cannot ſit long enough to arrange and methodize my ideas: you will, I fear, find them "Ruda indigeſtaque moles." However, I thought if there was any thing peculiar, you would diſcover it, and ſelect what

was worth remembering, as eaſily as if the moſt exact method had been preſerved.

The ſituation of Bordentown is lofty, upon a narrow neck of land, waſhed on each ſide by two conſiderable creeks which empty into the Delaware. Along theſe creeks is a good deal of low ground, great part of which is regularly overflowed by every tide, and pretty generally covered with vegetable productions.

After a ſummer uncommonly dry and hot, the dyſentery appeared in Bordentown early in Auguſt, during the whole of which month it continued to ſpread rapidly through the town; about the firſt of September it began to decline, and ended in the firſt weeks of October. The diſeaſe was abſolutely confined within the limits of Bordentown, (except in one inſtance about two miles diſtant, of a young man whoſe buſineſs it was to cart wood, and who had frequently been into the town, the whole of September,) and the country every where was uncommonly healthy: not an inſtance of cholera; the remittent fever unheard of, and but very few caſes of ordinary fever and ague.

Though the dyſentery attacked indiſcriminately all ages and both ſexes, it was remarkable that among the fatal caſes, four out of five were boys, from two to fourteen years of age. There were fewer ſlight caſes than I ever ſaw among an equal number—almoſt every one that was ſeized, had the diſeaſe, eſpecially on its firſt appearance, ſeverely. Great debility of the ſtomach, weak pulſe, great proſtration of ſtrength, coldneſs of the extremities, pale, ſunken countenance, uncommon reſtleſſneſs, brown tongue, a moſt diſtreſſing teneſmus, and, in ſome caſes, difficult and painful micturition, were the moſt preſſing and dangerous ſymptoms.

From the beginning of the diſeaſe, every ſubſtance, whether food, drink, or medicine, conſtantly aggravated the nauſea, and was pretty certainly rejected. This circumſtance deprived me of the uſe of ſome medicines which have been fre-

quently adminiſtered with good effect: had there been pain in the epigaſtric region I ſhould have ſuſpected inflammation.

The beginning of the diſeaſe was not, as is frequently obſerved, a diſordered ſtate of the bowels; univerſal laſſitude, ſucceeded by ſlight rigors and a fever immediately ſupervening, marked the attack. The pulſe, from the firſt was very frequent and very weak, the one ſeeming inſeparably connected with the other: intermiſſion and inequality in the pulſations might be diſcovered early in the diſeaſe, and were more remarkable in the progreſs of thoſe caſes which terminated fatally. The exacerbations of the fever obſerved a tertian type; there being every other day a remarkable increaſe of all the ſymptoms, which, contraſted with the intermediate days, gave to thoſe days a fallacious appearance of amendment.

On the firſt days, the ſtrength ſeemed withered as if by a ſtroke of lightning, marking the highly ſeptic nature of the diſeaſe: the mind alſo ſuffered nearly in the ſame degree with the body. It was truly ſurpriſing to ſee the young and vivacious, ſuddenly deſerted of all their ſprightlineſs and fortitude, given up a prey to the moſt abject deſpondency. It would, perhaps, be difficult to aſſign a reaſon why this diſeaſe ſhould peculiarly affect the mental faculty; but, in the caſes before us, it could not fail ſtriking the ſenſes of the moſt inattentive obſerver.

Not only the extremities, but moſt parts of the body were deficient in natural warmth: the legs and arms eſpecially, were cold from the beginning, and continued ſo during almoſt the whole progreſs of the diſeaſe. The ſkin, when preſſed by the finger, ſo as to empty the ſubjacent veſſels, remained white a conſiderable time, indicating a languid circulation in the capillaries. Over the whole body, but moſt remarkable in thoſe parts which were coldeſt, was a clouded appearance, very much reſembling the paler kinds of marble. I am not clear to which this ought to be referred, whether to the petechiæ or vibices, or if to either, as it does not exactly anſwer their deſcription. From this ſtate of the minuteſt veſſels, I was induced

to try the effects of warmth, and in ſome caſes encouraged a diaphoreſis which it was always difficult to induce, and ſtill more ſo to preſerve for any length of time, owing to the almoſt conſtant neceſſity of the patient's riſing. I could not obſerve that the ſweating produced the leaſt abatement of the malignity of the diſeaſe: the ſtools were indeed leſs frequent, but, in the ſame proportion, the anxiety increaſed.

Though the countenance was in every inſtance pale, it ſurpriſed me to ſee the little alteration produced upon the eye, which I do not remember to have ſeen in any other diſeaſe. Is it common for the eye, in dyſentery, to retain its luſtre until within a very few hours of diſſolution?

The anxietas præcordiorum was from the earlieſt ſtage of the diſeaſe an urgent ſymptom, and afforded the worſt preſage. The patients complained of intolerable oppreſſion—were almoſt conſtantly in motion, turning from ſide to ſide of the bed—now attempting to riſe up, then falling back, ſpent with the fatigue of the exertion. No inſtance of delirium that was conſiderable: in ſome of the worſt caſes there was a picking at the clothes and a motion of the hand as if driving away flies, but the patient, whenever ſpoken to, was rational.

The tongue was at firſt whitiſh with a tinge of the yellow. Two or three days from the commencement of the diſeaſe, the tongue, very low down, appeared brown, which gradually extended to the tip, the colour darkening in thoſe parts where it was firſt diſcoverable, and ſucceſſively, until the whole became almoſt black and abſolutely dry. Aphthæ were ſeen in ſeveral of the fatal caſes. In thoſe who recovered, deep fiſſures, extending through the brown cruſt and into the very ſubſtance of the tongue, rendered it exceedingly ſenſible to every irritation, occaſioning much diſtreſs.

A thin diſcharge, of not much ſmell, reſembling water in which meat had been waſhed, appearing very corroſive, excoriating the parts and occaſioning violent and almoſt continual teneſmus, occurred in ſeveral caſes. This kind of diſcharge I conſtantly found attended the moſt violent, and, too

frequently, fatal inſtances of the diſeaſe. In one inſtance, only, did I ſee thoſe ſcyballa which the celebrated Cullen has ſuppoſed the proximate cauſe of dyſentery.

Having fully embraced the practice of Sydenham and Sir John Pringle, principally, becauſe both were much verſant in this diſeaſe, and wrote more with a deſire of improving the ſcience of medicine than of ſhining as authors, the method of cure I firſt attempted was to cleanſe the primæ viæ, directing moſt of my attention to the ſtate of the ſtomach and bowels. With this view I began the cure with an emetic given in divided doſes and at long intervals, ſo as to inſure its purgative effects. The diſcharge was commonly a vitiated bilious matter of a greeniſh colour: the ſickneſs, however, was in no caſe alleviated; on the contrary, the ſtomach was always left in the ſame or even a greater ſtate of diſorder. In one or two of the earlieſt caſes, from an idea that the continuance of this ſymptom might be the effect of impurities ſtill remaining, I repeated the medicine, but the ſucceſs did not juſtify the reaſoning; the debility of the ſtomach was evidently increaſed by the medicine.

After the emetic I gave ſome mild purgative, in the choice of which I was allowed no very great variety, for, from the beginning of the diſeaſe, the ſtomach was unable to bear either Glauber's ſalt or the ſal cathart. amar. though the taſte were ever ſo artificially covered: caſtor oil was almoſt equally offenſive to the ſtomach, and very ſeldom remained long enough to be of any uſe. Calomel, united with a ſmall proportion of rhubarb, and the vitrum antimonii ceratum, were the only medicines I could avail myſelf of with any tolerable certainty. In the firſt caſes I refrained almoſt wholly from the uſe of opium, depending principally upon "purging aſſiduouſly employed." It is with the utmoſt pain I am obliged to ſay that this method, ſupported as it is by the authority of the greateſt, and I believe, moſt candid writers in medicine, though conducted with all poſſible circumſpection, always doſing the medicine ſo as to act in the moſt lenient manner, produced little or no advan-

tage. Emetics deſtroyed the tone of the ſtomach, and laxatives haſtened the progreſs of the diſeaſe by increaſing the patient's debility.

Foiled in this mode, I adopted a new one which, though it did not ſucceed to my wiſhes, was more ſatisfactory than the former. I now treated the diſeaſe as a typhus fever, directing but little attention to the ſtate of the bowels, which I began to conſider as a preſſing ſymptom only, to obviate which, I tried the force of injections, compoſed of ſome demulcent, with a liberal quantity of opium, but they were either diſcharged immediately upon the withdrawing of the pipe, or, at beſt, were never retained above a minute: in two caſes, I repeated them half a dozen times in each, in hopes that the opium might moderate the irritability of the rectum, and that perſeverance would at length obtain the end deſired. The teneſmus was increaſed by every attempt, the parts being ſo much excoriated as to occaſion the moſt acute pain in the operation, to which cauſe, principally, I attributed the failure of ſucceſs.

If I were to judge from my own particular experience, I ſhould either condemn as pernicious, or diſregard as uſeleſs, the application of bliſters. In four caſes in which I uſed them, I could diſcover no ſenſible benefit, and they certainly muſt add ſomething to the ſufferings of the ſick. The bliſters were in all theſe caſes applied to the hypogaſtric region.

Believing it unneceſſary to give you a detail of every particular remedy, I here conclude this account, but not without aſſuring you with what warmth of affection,

I am, eſteemed Sir,

Your much obliged, and very humble Servant,

FRANCIS BOWES SAYRE.

DR. BENJAMIN RUSH.

Croſwicks, 20th December, 1792.

On the Efficacy of Olive Oil as a Purgative, after the ineffectual Trials of more active Remedies.—Alſo, an Account of an Intermittent, cured by naſal Hæmorrhage; and of a chronic Intermittent ſuſpended by a Scald. *By* DR. JOHN VAUGHAN.

WILMINGTON, *February 4th*, 1805.

SIR,

IF you deem the following caſes worthy of a place in the Medical Muſeum, they may, probably, not be unintereſting to your readers. Though theories entertain and inſtruct, we are often, in practice, diſappointed in the operation of medicines. Peculiar ſtates of ſyſtem, frequently preclude the uſe of remedies which would otherwiſe promiſe the moſt ſucceſs.

Mr. ———, aged 50, has, for ten years, been ſubject to occaſional attacks of the cholic, with obſtinate conſtipation of the bowels. On the 15th ult. I was called to him, and found him exceſſively diſtreſſed with flatulency and tormina, and frequent vomiting. He had, previouſly, taken two ounces of ſulphate of ſoda, an ounce of caſtor oil, and a conſiderable quantity of manna and ſenna, without effect. His pulſe being rather full, and apprehending inflammation, I drew a few ounces of blood, and commenced the uſe of purgatives and active injections. In the courſe of the following night, a dark coloured matter, of a ſuſpicious appearance, was diſcharged by vomit, and my patient expreſſed himſelf ſenſible of inverted periſtaltic motion, commencing low in the left hypogaſtrium, which excited apprehenſion of introſuſception or iliac paſſion. The alarming condition of my patient, produced the moſt unremitted diligence in his attendants. Cathartics of different kinds and in varied forms were aſſiduouſly given, and enemas of ſalts and ſenna—of aſſafœtida—of carminative teas with ol. ricini—of tobacco, &c. were frequently exhibited, and fomentations applied to the abdomen, with but little effect. A reſpite from the more urgent ſymptoms was, however, obtained for two days, when the tormina and vomiting returned.

Medicine ſeemed only to irritate the primæ viæ and increaſe his diſtreſs; and, while pondering on the uſe of quickſilver, it occurred to me that, perhaps, olive oil from its bland taſte and aperient quality, might not offend the ſtomach, and, if given in frequent doſes, might eventually glide through the inteſtines. Accordingly, half an ounce of ſallad oil was given every hour, alternated with injections of fennel-ſeed tea and caſtor oil. In ſix hours, conſiderable relief was obtained and ſeveral diſcharges procured. For two days my patient appeared convaleſcent, but incautiouſly taking three of Fothergill's pills, as *a ſimple laxative* (though compoſed of colocynth, aloes, ſcammony, and calx of antimony) he ſuffered a return of tormina and vomiting; but two ounces of olive oil, at one doſe, and two or three injections, effectually cured him. The oil paſſed through the bowels unmixed with feculent matter, and he was ſpeedily reſtored to health.

It is, at the firſt view, ſomewhat irrational to ſuppoſe that ſo mild an aperient as olive oil ſhould prove cathartic, when the routine of active purgatives have failed; but it was ſuggeſted by the circumſtances already mentioned, and its utility was proved by the event. I ſhould certainly have given the quickſilver, had it not been for the unpleaſant reflections of the relatives, in caſe of an unfavourable event. Though no conſideration ſhould counteract the uſe of remedies, offering, even, a probability of ſucceſs, in deſperate caſes; yet if the object can be attained without aggravating the diſtreſſes of relatives, already great enough, the more agreeable alternative ſhould be choſen.

If quickſilver operate only from its weight, it is an inoffenſive remedy, in caſe it paſs the bowels; but the ſame weight, which would overcome ſerious obſtruction in the inteſtinal canal, might, in caſe of inſuperable reſiſtance, force its way through the coats of the bowels. Whether the olive oil would prove equally ſucceſsful in a ſecond caſe or not, is difficult to determine, and though the uſe of any article, in a ſingle caſe,

is not to be relied on as a general remedy, yet it is worthy of future trial.

Caſe of Intermittent Fever cured by Naſal Hæmorrhage.

Mrs. ———, while labouring under an obſtinate intermittent fever, in the ſeventh month of pregnancy, was attacked with naſal hæmorrhage, which reſiſted all the uſual remedies, and was finally ſtopped by ſpunge forced up the noſtril, ſo as to preſs on the mouth of the ruptured veſſel. In five days, ſhe was ſuppoſed to have loſt four pounds of blood, which effectually cured her previous diſeaſe.

Bloodletting is often uſeful in intermitting fever, but it was the exceſſive diſcharge in this caſe, inducing a different diſeaſed action, which baniſhed the febrile diſorder.

Caſe of Chronic Intermittent, ſuſpended by a Scald of the Foot.

A girl, who had had a chronic periodical fever for ſeveral weeks, accidentally ſcalded her foot, which remained ſore for two weeks, and during this period ſhe was freed from fever; but, when the ulcer healed, her fever returned. It is not improbable, but if the ulcer had been kept open a fortnight longer, or an epiſpaſtic added, in this caſe, the cure would have been completed.

I am, Sir, reſpectfully,

Your Friend and humble Servant,

JOHN VAUGHAN.

DR. JOHN REDMAN COXE.

Account of a Caſe of Intermitting Fever, cured by a copious Bleeding from the Noſe.

STRASBURG, *February 27th*, 1805.

DEAR SIR,

I AM prompted to relate a caſe of intermittent fever, for your Muſeum. The ſon of Mr. I. M. aged fifteen years, was attacked in the month of Auguſt, 1804, with a violent intermittent. The father not being fond of much doctoring (as he expreſſed himſelf), an emetic only was uſed: the diſeaſe continued about three months, with daily paroxyſms, during which time, the patient became much emaciated, when a naſal hæmorrhage intervened, and I was called upon to ſave the young man from bleeding to death.

Being made acquainted with his ſituation, I ſuffered the hæmorrhage to continue, until three pounds and an half of blood were loſt in three days, the laſt of which would have ſcarcely tinged a linen cloth. The patient from this time recovered rapidly, without a return of the diſeaſe, notwithſtanding relapſes were more common laſt ſeaſon in this neighbourhood, than had been hitherto known.

From, dear Sir,

Yours, ſincerely,

JOSIAH ANKRIM.

How is it that tonics and depletives produce the ſame effect? This may deſerve ſome conſideration.

To DR. JOHN R. COXE.

Some Obſervations on the Introduction and Progreſs of the Small Pox, at Dumfries (Virginia) during November and December 1804, *and January* 1805, *accompanied with further Evidence in Proof of the prophylactic Power of the Cow-Pock: communicated in a Letter from* DR. JOHN SPENCE, *to the Editor, dated, Dumfries, March* 30*th*, 1805.

I THIS day received a Richmond newſpaper, entitled the Enquirer, dated the 28th inſtant, in which I find the following extract from the London Monthly Magazine for December 1804, under the head of "Notices of Works in hand to be publiſhed:"——"Mr. Goldſon of Portſmouth has made ſeveral experiments to aſcertain the effect of vaccination in the hand, and has uniformly produced a veſicle diſtinctly different from that, from the ſame matter in the arm, having every reſemblance both in reſpect to ſize and the peculiar *blue* tint to that, which takes place in the caſual diſeaſe. The reſult of theſe experiments, with further facts and obſervations on *ſmall pox ſubſequent to vaccination*, will be ſent to the preſs in a few days."

From this notice it would appear that a ſecond attack is meditated by this gentleman againſt the efficacy of the cow-pock; but if it be as feeble as his firſt, the friends of vaccination have little to dread. But when ſo much uneaſineſs is excited by theſe attempts in the public mind, and ſo much clamour raiſed againſt one of the greateſt diſcoveries ever made in the healing art, it is certainly the duty of every real friend to the new practice, to ſtep forward promptly with ſuch additional evidence, as he may poſſeſs, in its favour. I therefore beg leave to ſubmit to your conſideration, the following ſtatement of facts.

When I applied to you about the beginning of laſt winter for a ſupply of vaccine matter, I informed you of the alarm excited in this town and its vicinity by the ſudden and unexpected appearance of the ſmall pox. A runaway negro belonging to a gentleman in this county, was brought here from Phi-

ladelphia early in November laſt, and confined in the jail of this town. He was ſoon afterwards taken very ill, and from the violence of the fever, and the pains he complained of, the phyſician who attended him, ſuppoſing that theſe inflammatory ſymptoms proceeded from a ſevere cold, directed bleeding and the uſual antiphlogiſtic remedies; for there was no ſuſpicion of the diſeaſe being the ſmall pox, until the eruption had aſſumed its characteriſtic appearance. The diſeaſe proved to be of the confluent kind, and terminated fatally about the fourteenth day. Although this patient was confined in the upper ſtory of the jail, and great circumſpection obſerved to prevent all intercourſe with him, a negro girl living in a family adjoining the jail, broke out with the ſmall pox about the middle of December, upon which a meeting of the magiſtrates was ſummoned, who, notwithſtanding the extreme inclemency of the weather, ordered this girl, with the whole family, to be removed to a ſolitary houſe in the country, and directed a phyſician to attend them. The children of this family were there inoculated with matter taken from a puſtule of this girl, and paſſed through the ſmall pox very favourably. About ten days after this, information was brought to town, that another negro man, who had been hired here, but who declared he had had no communication with the jail or any infected perſon, broke out with the ſmall pox, when on a viſit to his maſter's plantation about ſeven miles from this place, and excited thereby a degree of conſternation among the inhabitants of that neighbourhood, which is undeſcribable. On this plantation (the property of Mr. Storke) there were more than thirty perſons, all ſtrangers to the ſmall pox, except Mrs. Storke, the miſtreſs of the family, a lady conſiderably advanced in years. During the ſummer of 1802, when vaccination was prevalent here, two negroes of Mr. Storke's, anxious to be vaccinated, had the operation performed, and paſſed through the diſeaſe without the knowledge of their maſter. Fortunately one of theſe negroes was the mother of the man who was attacked with the ſmall pox. This woman attended her ſon day and night

during the whole of the diſeaſe, which proved ſevere, and was aſſiſted at all times by the other negro who had paſſed through the vaccine. Both of them were not only thus expoſed to the variolous contagion, during every ſtage of the diſeaſe, but were alſo inoculated with freſh matter taken from the patient they nurſed, without its producing any effect. Theſe ſtriking caſes of the preventive power of the cow-pock ſoon ſpread far and wide, and had the happieſt effects in making converts to the new inoculation. Mr. Storke and his whole family were immediately vaccinated with ſome of the virus you ſent me, all of whom paſſed through the diſeaſe in the mildeſt manner. From his plantation, the vaccine inoculation was conveyed to the neighbouring ones, and is ſtill carried on in that part of the country with every degree of ſucceſs that could be wiſhed for.

On the removal of the infected family from town, by order of our magiſtrates, it was fondly hoped by the inhabitants that no further danger was to be apprehended from the ſmall pox; but this hope was of ſhort duration; for on the 30th of December, it was aſcertained that the diſeaſe had broke out in the natural way in the family of Mr. Adams, whoſe houſe is ſituated nearly in the centre of the town. How his daughter, a girl of about thirteen years of age, caught the contagion, has never been accounted for, and the numerous puſtules with which ſhe was covered, had advanced conſiderably in their progreſs, before the nature of the eruption was diſcovered, for her parents, fearful of being compelled to remove their family from town, at a ſeaſon of the year ſo unuſually rigorous, carefully concealed her diſorder. Early in the enſuing month, her brother, who caught the contagion from his ſiſter, alſo broke out, had the diſeaſe in the moſt malignant form, and died. From the extreme anxiety of theſe parents to conceal the ſmall pox, an anxiety proceeding, no doubt, from the rigour of our laws, no medical aid had been called in, until this boy's life was deſpaired of: at that time, two black children in the kitchen were inoculated for the ſmall pox by one of the family, and paſſed ſafely through the diſeaſe. Since that peri-

od, which now nearly exceeds nine weeks, no caſes of ſmall pox have occurred. Of the five perſons who had the ſmall pox in the natural way, *two* died; *ſeven* children were inoculated for the ſmall pox, ſome of whom had a heavy eruption, but all recovered.

Having given this brief hiſtory of the introduction and progreſs of the ſmall pox among us, I ſhall now add a few words on the mode in which vaccination was conducted.

On the 22d of December, I ſucceeded in exciting the genuine vaccine puſtule from the cruſt you had the goodneſs to ſend me, in a family where there exiſted the greateſt danger; I mean in the family of the deputy-ſheriff, whoſe duty it is to ſuperintend the jail, to ſupply the priſoners with proviſions, and who, from the neceſſary intercourſe that took place between his ſervants and the deceaſed runaway, was very apprehenſive of the ſmall pox. From this ſource we had abundance of the freſh tranſparent fluid, and the new inoculation ſpread rapidly. But the ſolicitude for vaccination was diſplayed moſt remarkably, on the appearance of the ſmall pox at the houſe in the centre of the town, as has been already ſtated; for then, thoſe who were indifferent about it in 1801 and 1802, and even many perſons who ſtill had doubts of its efficacy, eagerly embraced the opportunity now offered.

Although the ſmall pox prevailed in this town and its neighbourhood, more than two months, there did not occur a ſolitary inſtance of a vaccine patient having been ſeized with that diſeaſe, either when teſted by inoculation or otherwiſe; and it is proper to obſerve, that no variolous inoculation has been permitted in this quarter, ſince the ſpring of 1791, a lapſe nearly of fourteen years.

But, as repeated expoſures of vaccine patients to the natural ſmall pox, may have greater influence with ſome than ſimple inoculation with variolous matter, I beg leave to ſelect a few well atteſted caſes. The firſt caſe which occurred, and which made conſiderable impreſſion, was that of a blackſmith who was employed to remove the irons from the runaway, in jail,

when covered with puſtules. This blackſmith was vaccinated in 1801, and though thus expoſed to the effluvia of the variola, reſiſted the contagion. When the ſmall pox raged at the houſe of Mr. Adams, his ſon-in-law Mr. Weaver, who had his family vaccinated, partly in 1801, and partly in 1802, took advantage of the preſent opportunity to teſt the efficacy of the cow-pock. He ſent his eldeſt ſon and daughter, the one about ten, the other about twelve years of age, to viſit their relations. They were at Mr. Adams's at all hours of the day; lay on the ſame bed with the boy who had the diſeaſe in the confluent form, and even ſaw him put in the coffin, when the corpſe was in a putrid ſtate. Mrs. Wort, ſiſter to Mrs. Adams, alſo ſent two of her children about the ſame time and with the ſame intention; though they, as well as Mr. Weaver's were day after day in the very focus of contagion, yet all of them eſcaped with impunity. The next caſes that occurred were the black ſervants of Mr. Gilbert, who lives but a few yards from Mr. Adams's. Theſe ſervants had the freeſt intercourſe with their neighbours, the ſmall pox patients, viſiting them on purpoſe to take the diſeaſe if poſſible, but in vain.

Of the vaccine patients who were ſubjected in the above experiments, either by inoculation with variolous matter, or repeated expoſures to the natural ſmall pox in its moſt malignant and hideous forms, *ſeven* had been vaccinated from the ſtock of virus tranſmitted by Dr. Waterhouſe to the Preſident in the ſummer of 1801, part of which was obligingly forwarded to me by the Preſident's phyſician, early in October in the ſame year. In Dr. Waterhouſe's ſecond publication on the kine-pock, I have ſtated that from this ſource we carried on, without intermiſſion, vaccination in this town and its neighbourhood, from October 1801 to December 1802.

Of thoſe who were vaccinated with the limpid fluid obtained from your cruſt, *three* were ſubjected with impunity to the teſt of the ſmall pox, and at the time the experiments were made the ſcabs were adhering to their arms.

When the ſmall pox broke out here, Goldſon's caſes were known, and rumours, extracted from Engliſh prints, were cir-

culated in ſome of our newſpapers, to the injury of the Jennerian inoculation, and ſo much credited, that I believe (had it not been for the preſence of the ſmall pox), vaccination could not at that time have been carried on here to any extent by the moſt perſuaſive phyſician. The intereſting caſes and deductions from theſe caſes publiſhed in ſupport of the prophylactic power of the cow-pock, by the Vaccine Inſtitution of London, together with hundreds of ſimilar caſes of equal dignity, on record in Europe, would not have had the effect to which they are ſo juſtly entitled. "So true it is, that people are unwilling to believe what happened a great way off, or a long while ago."

Theſe conſiderations will, I truſt, plead my apology for the foregoing minute ſtatement of facts, and alſo juſtify me for the liberty I have taken in mentioning the names of perſons of credit and reſpectability, who can authenticate theſe facts.

I have now the ſatisfaction of adding, that in this part of Virginia the moſt unſhaken confidence is now repoſed in the protecting power of the cow-pock: ſo univerſally, indeed, has the new inoculation been adopted here, that I am confident there are not in this place, which contains upwards of a thouſand inhabitants, a dozen children who have not undergone the vaccine, ſo that we believe our ſmall town is at preſent as completely ſheltered from the ravages of the ſmall pox, as any town in the old or new world.

I cannot conclude this letter without again tendering you our warmeſt thanks, for the promptneſs with which you ſupplied us with the vaccine at a time, when the ſudden introduction of the ſmall pox here, inſpired ſo much horror: and it is but juſtice to add, that the friends of vaccination and humanity throughout the United States, are under ſingular obligations to you, for the able and deciſive manner in which you came forward in your valuable Muſeum, to ſtem a torrent of incredulity, and guard truth againſt the ſhafts of ignorance, prejudice, and ſcepticiſm.

Hiſtory and Diſſection of a Caſe of Clonic Spaſm. By ELIJAH GRIFFITHS, M. D. *of Philadelphia.*

MARCH 22d, 1805. Mrs. Criſtine conſulted me in the caſe of her daughter Ann Criſtine, between the age of nine and ten years.

The patient has complained of head-ach, and a pain in the ſtomach for a long time; but about three weeks ago, theſe complaints left her, when certain unuſual geſtures, ſudden ſtartings, and hyſterical ſymptoms came on, and have ſince increaſed to a very alarming degree.

From a ſuſpicion that worms were the cauſe of the ſymptoms, I directed calomel and jalap, in ſmall and repeated doſes, with the application of ſtrong ſinapiſms to the feet.

23d. The ſinapiſms were not applied; the purge operated briſkly without expelling any worms. She was reſtleſs, rather thirſty, had very little ſleep through the night, and is thought to be worſe than yeſterday. The patient is ſitting up, but ſo affected with clonic ſpaſms, as to give her a very unuſual appearance. The pulſe is natural, except rather frequent; ſkin as in health; tongue free from fur, and moiſt; eye perfectly natural.

She has very little appetite, but experiences neither ſickneſs nor pain from the diſeaſe.

She was directed to take nitre, calomel, and tartar-emetic, in nauſeating doſes, and to apply bliſters to the wriſts, in the evening.

24th. The bliſters have drawn well; the medicine has been continued, but without any alleviation of the ſymptoms; ſhe has paſſed a ſleepleſs night, without any ſenſible change ſince yeſterday, except a conſiderable aggravation of the ſpaſms.

The ſenſes, the faculties, and operations of the mind, are as free from diſeaſe as ever they were, while the muſcles of voluntary motion, have nearly thrown off all allegiance to the will.

The patient was directed to omit the laſt medicine, and take pulv. rad. valer. ʒſs. every third hour, as an anthelmintic and nervous medicine. The ſymptoms increaſing in the evening, ſhe was ordered gum. fœtid. gr. iv. every third hour, and to apply a bliſter over the whole head. From the agitated ſtate of the patient, the bliſter could not be applied; cups to the temples and back of the neck were ſubſtituted for it.

25th. Patient did not ſleep any laſt night; was ſo reſtleſs as to require an attendant to hold her in bed: by lying conſtantly on her back, the ſkin is ſo fretted as to cauſe great diſtreſs. The pulſe is weaker and more frequent than yeſterday; eye a little inflamed, tongue moiſt and natural, ſkin cool, &c. The ſpaſms have increaſed ſo, that the eye-ball is conſtantly rolling, tongue thruſt out frequently, face diſtorted, teeth gnaſhing ſo as to cut the tongue and cheeks; and, in ſhort, every unuſual geſture is performed by the head, trunk, and limbs, that a horizontal poſition will admit of.

The warm bath was directed, and a ſtrong infuſion of ſpigelia Marylandica with ſenna. The bath relieved the ſpaſms, but its effects ſoon went off without any benefit from repetition. The medicine moved the bowels ſeveral times, with no other effect than bringing away one worm of the lumbrical kind. In the evening, opium gr. i. was given, and repeated every two hours to procure ſleep and relieve the ſpaſms.

26th. Six grains of opium were taken, without procuring ſleep or any alleviation of the ſymptoms; was ſick at ſtomach, with ſlight delirium in the night. The pulſe is more frequent and weak than yeſterday, with an evident aggravation of the ſpaſms. The warm bath was repeated without any ſalutary effect.

The patient is directed to take ol. ſuccin. gt. vi. every two hours.

27th. She has paſſed a ſleepleſs night, and I think her in every reſpect worſe. Articulation very indiſtinct, and deglutition difficult. Ordered wine to be given freely, and continue ol. ſuccin. gt. x. every hour. At night ſhe took opium gr. ij.

every half hour till eight grains were taken, when her attendants thought ſhe was worſe, and it was omitted.

28th. The patient is more compoſed than before, but it evidently reſults from debility. She has not ſlept two hours the laſt five days and nights, and beſides, has taken very little aliment within the ſame period.

She expired at three o'clock, P. M. apparently in her reaſon, and without a ſtruggle.

29th. I examined the brain of the deceaſed, in the preſence of Dr. Meredith, who aſſiſted me. On removing the cranium and dura-mater, the parts below appeared natural, the ventricles had very little water in them; in ſhort, the brain was as free from diſeaſe as any I have ever ſeen diſſected.

I regret not having examined the ſtomach; however, that organ exhibited no ſigns of diſeaſe, at any period of the complaint, ſo as to juſtify a belief that the cauſe exiſted there, in the form of ſpaſm, or inflammation; and even had there been inflammation found, the medicines given might have been conſidered as the cauſe of it. On the day of the patient's death, her mother informed me, ſhe had been very much terrified by a man intoxicated, about the time the diſeaſe commenced; and this was thought by the patient, to have been the cauſe of her complaint. Be the cauſe what it may, the ſpaſms were violent, but altogether clonic.

On the Nature and Effects of Syphilitic Agonorrhœa. By Dr. Felix Pascalis, *in a Letter to the Editor.*

Sir,

IF you will do me the favour to admit into your valuable Muſeum, the following remarks on ſyphilitic *Agonorrhœa*,* which have been drawn up with a diffidence commenſurate with the novelty of the ſubject; and if it can furniſh hints enough for a clear and ſatisfactory inveſtigation of that complaint, to ſome abler and more experienced phyſician, I ſhall feel myſelf highly gratified.

Yours, reſpectfully, &c.

Philadelphia, FELIX PASCALIS.
February 15th, 1805.

A GENTLEMAN from one of the ſouthern ſtates applied to me five years ago, for medical aid in his complaint, which he called nervous, and which he deſcribed very confuſedly; for "he never was ſick," ſaid he, "but he never was well." His emaciation and debility, with a remarkable dryneſs of a much wrinkled ſkin, were ſo viſible, as to give him the appearance of declining age, although he was 45 years only. A few of the gratifications of the ſenſes remained to him. He ſlept little indeed; he reliſhed no kind of nouriſhment, and his eye-ſight was faſt failing. To relieve his uneaſy ſenſations, he was obliged to reſort to the uſe of ſpirituous liquors (which he diſapproved of very much), and alſo to high-ſeaſoned meats, by which means he could relieve the deadly feelings ariſing from

* The addition of the Greek negative ἀ, to that old technical name is obvious: but I regret that the whole of it is incorrect; γονὴ *ſemen*, ſhould be exploded, with the belief of the ancients, of the nature of that diſorder. Σιφνος or Siphno, the iſland of impures, might give a better and more correct idea, by calling it *ſiphnorrhœa*, or *aſiphnorrhœa*.

his abdomen. By all accounts, indeed, his ſtomach, kidneys, and bladder ſeemed to be the ſeat of numbneſs and ſlight pains. Great flatulencies incommoded him very much. Above all, he feared a kind of gravelly diſorder, for he conſtantly was ſubject to a troubleſome dyſuria. No better account could be given to me, although I urged as many queſtions as chronic and ſymptomatic cauſes might ſuggeſt, and, what reduced ſtill more for me, the chapter of conjectures, was the perfect ſtate of health of his amiable family, compoſed of a wife and five children, and his abſolute forbearance of any kind of exceſs or debauchery during the laſt five years, to which he had, however, been expoſed before that period. He remembered that having participated once in convivial liberties, he had been thrown among impures; but no foul diſorder was contracted, as he was well convinced, by having not known any of the uſual ſymptoms, and by medical authority. He was aware, notwithſtanding, that his miſeries had begun from, and continued ſince, that period.

I begged to have time to conſider a caſe very ſingular and obſcure in its diagnoſtics; and this I protracted; yet, as I found I could not remedy it, unleſs by means repugnant to a patient prejudiced againſt any ſuſpicion of an exiſting venereal diſorder, I determined at laſt upon a mode of treatment, without certainty, or any facts whatever in ſupport of the opinion I had formed of the diſeaſe. At firſt a bougie was introduced into the urethra with much facility, and with as little pain as if the parts had been palſied, except under the proſtate, where a little preſſure was requiſite to penetrate into the cavity of the bladder. Warm bathings, a mild and reduced diet, with two nitrous and mercurial doſes, were all the preſcriptions to be obſerved each day; and after this method had been purſued five days, the glans appeared tumefied, the urethra became painful, and the uſual dyſuria far more diſtreſſing than before. This ſtate I could not keep up much longer after the bougie had been introduced five or ſix times, as a violent chordee with copious and puriform diſcharges took place, which in a

few days I was obliged to counteract by bleeding and other uſual remedies. That the matter had a degree of venereal acrimony, I had the proof, as it excoriated the glans; and, that it anſwered perfectly to the critical ſecretion of the infected membrane of the urethra which conſtitutes a gonorrhœa, I thought was obvious by the quality and ſucceſſive colours of the diſcharges. With a gradual abatement, however, and alteration, the complaint became a ſimple gleet after twenty days, and in ten days more, it perfectly ſubſided, and the patient gradually recovered his former and youthful health. I had the opportunity to ſee him again a year after, when he confirmed by his bodily appearance and by his candid accounts, the abſolute ceſſation of his *nervous* and formerly diſtreſſing ſenſations.

There appears no difficulty, Sir, to explain ſuch an extraordinary caſe, if we advert to the idioſyncracy of the ſubject, in whom, the parts affected could never be raiſed up to that degree of inflammation which is neceſſary to promote ſuppurative diſcharges, by the ſole irritation or ſtimulus of the exiſting virus. The ſame want of inflammation has been obſerved ſometimes in large wounds, in fractured bones, and even in felons and whitlows, which thereby are aggravated and attended with terrible effects, eſpecially on the nervous ſyſtem. This is, I believe, the beſt ſcale to go by, when we muſt judge of the extent of a morbid ſtimulus. Thus the tetanus and chorea Sancti Viti, are now eaſily traced to deep lacerations, contuſions, or morbid cauſes that are deprived of inflammation, or *digeſtive reſolution*. Theſe general obſervations render it very probable, that with the ſame circumſtances, an impure connection may conſtitute an *agonorrhœa*, with a dreadful reaction on the nervous ſyſtem. A few facts more muſt be ſufficient to eſtabliſh this doctrine, and theſe have not been wanting to me after five or ſix years of obſervation on that very ſubject. Medical inquiry, indeed, to be uſeful, requires only that we ſhould hold ſuch grounds or principles as we may reaſonably apply to facts as they occur. Among theſe, and in three inſtances which I ſhould think too tedious to deſcribe, the ſame cauſe and the

ſame effects were illuſtrated; and in others, I moreover, remedied or abſtracted the inflammation of the virus from more delicate parts, ſuch as the proſtate, the teſticles, &c. by fixing it in the urethra. It was with the obvious ſucceſs of an artificial irritation in certain caſes, that the celebrated *Daran*, of France, ſupported the diſcovery of his bougies, and pretended, that, with certain ingredients, they were a ſpecific remedy for gonorrhœa: indeed any thing that promotes a diſcharge from the urethra, is finally, the beſt known remedy of the cauſe and of its ſymptoms. But unfortunately, *Daran* gave out his remedy as a quack, and indiſcriminately, for any degree or ſtage of the complaint; he reſembled *Sanctorius*, who having diſcovered the inſenſible perſpiration, publiſhed his aphoriſms to cure all diſeaſes by ſweating. Thus a good remedy is often diſcredited by being too often miſapplied.

Let us illuſtrate, however, by further obſervation, both the remedy and the true exiſtence of a ſyphilitic *agonorrhœa.*

I. Whether the irritability of the membrane of the urethra is, *ſui generis*, or whether it is but a *quantum* of that, which, by our Maker is wiſely diſtributed to all our organs, although in different degrees, it appears that it can be increaſed or entirely deſtroyed. Thus, when it is accumulated, during the act of generation or erection, it can hardly bear the preſence of urine, and will ſuffer no inconvenience from that of the ſemen. On the contrary, it may be eaſily overcome by frequent contact with bougies, catheters, or even of acrid fluids adminiſtered in injection, and will not be affected with the leaſt pain or uneaſineſs. From this we may infer, therefore, that however ſtimulating the venereal poiſon muſt be, when applied to the mucous membrane of the urethra; circumſtances in the conſtitution may have diminiſhed the *quantum* of irritability of thoſe parts, or ſuch a length of time may have elapſed before an inflammation could be determined, that the morbid action has become habitual, and no puriform ſecretion can be afterward effected, unleſs it is excited by artificial means, or by the addition of any ſtimulus whatever. I confeſs, Sir, that the preſence of a con-

tagious poiſon thus rendered latent, inactive, and free from its impending and deleterious effects, without ever being exhauſted or altered in its virulence, and that, during the ſpace of many years, is a phenomenon incomprehenſible; yet it is evidently proven and inferred, from the known and ſimilar effects of other ſpecific and contagious poiſons, from that of the terrible hydrophobia, to the mild virus of the vaccine: for we are indeed appriſed, that although they muſt be ſeverally brought into action within a certain period of time, this has been found variable, ſometimes much ſhortened, as in the confluent ſmall pox, and ſometimes protracted to ſix months, one year, and even twenty years, as it has been aſcertained of the hydrophobia. But another difficulty is in the way; it is that of conciliating the inactivity of the poiſon thus received, with its ſingular effects on the conſtitution and nerves, as exemplified in the above mentioned caſe of *agonorrhœa*, and by ſtill more dreadful affections, ſuch as mental derangement, as I have ſeen in the infectious operation of other deleterious cauſes! why, if there exiſts an irritating or morbid principle, it does not follow from its being latent and inert, that it ſhould not affect the general and animal irritability, even to the utmoſt degree. Thus, a nail has deeply wounded the foot; the pain is gone, no inflammation appears, but the tetanus takes place! A girl of the age of thirteen years was once expoſed to the ſmall pox by infection, and received it, when the moſt ſevere attacks of epilepſy enſued, as it were, by tertian paroxyſms; they baffled every remedy during two weeks, until the worſt kind of ſmall pox broke out, from which ſhe recovered with difficulty, but the epilepſy never took place again. We have it here, and in numerous inſtances well known to medical philoſophers, demonſtrated, that while a contagious poiſon is rendered inert, and while the peculiar operation which belongs to itſelf is ſuſpended, the morbid cauſe has yet a great power on the general ſyſtem of irritability, that is to ſay, on the nerves. I am happy to find a theory to ſupport this phyſiological law, maſterly explained by

Xavier Bichat, who in his diviſion of *animal* and *organic life*,* evinces in the firſt, the relations and connections of each organic part with the brain and the nerves, independently of their private functions, aſſimilations, ſecretions, and excretions; but if theſe are impeded and ſuſpended, a ſtate of perturbation is introduced from the ſyſtem of organic life to that of animal life. "Without ſecretion," ſays he, "no digeſtion—without digeſtion, no nutrition—without exhalation, or without excretion, no abſorption." Hence the tumultuous effect on the centre of all animation and circulation, when a deleterious or morbid cauſe cannot be digeſted, eliminated, and reſolved: hence, no doubt, the ſyphilitic poiſon received on the membranes of the urethra, produced the long continued miſeries and ſtrange ſituation of the above ſubject.

II. I wiſh to be underſtood that the uſe of bougies in the caſe of *agonorrhœa*, ſeems to me preferable to injections, or to any other kind of artificial ſtimulus, becauſe, it appears to me the handieſt, and better calculated to excite a ſufficient degree of inflammation. It has beſides, the double advantage of remedying other local affections, ſhould they exiſt, as obſtructions, ſtrictures, gravel, &c. I have found that the common compound bougies, provided they are of a ſufficient conſiſtency, anſwer much better than the elaſtic ones, becauſe the ingredients with which they are made, are perhaps, more irritating when heated by the parts, and perhaps decompoſed. The bougie when introduced into the bladder, does not require to be left any length of time, nor to be uſed more than once a day, and for five or ſix times, after which, I rarely failed in obtaining the deſired effects. Should no inflammation occur, the caſe muſt be different, and the bougie by frequent introduction, becomes as little irritable as the ſchneiderian membrane of habitual ſnuffers. Any other remedy which can be adapted to the circumſtances of the caſe, I need not mention; as no particular rule of their exhibition could be determined, and ſhould be left to the judgment of practitioners.

* Recherches philoſophiques ſur la vie et la mort.

Obſervations on the occaſional injurious Effects of Leeches. By JAMES STUART, M. D.

PHYSICIANS obſerving the bites of leeches to be occaſionally followed by troubleſome inflammation, ulceration, and gangrene, have attributed theſe to ſome venomous quality of the inſect. But, as the precautions founded on this opinion, have proved ineffectual in obviating the evils noticed, the opinion may be juſtly ſuſpected to be fallacious.

Though the ſpecies of the leech be conſiderably numerous, there are but three which will ſtick. The ſnail tailed, the broad tailed, and the large brown leech with a reddiſh belly. The firſt adheres tolerably well; but growing only to an inch in length, they cannot be employed to any advantage. The ſecond grows to an inch and an half; but from an uncertainty in his functions, always gives place to the large brown leech, which laſt is, at this time, the ſpecies moſt generally employed in medicine. This, in common with the ſame family, has the general figure of the worm, and grows from two to four inches long. The body is compoſed of rings, which ſupply the power of contraction and of ſwimming. The ſkin on the back is blackiſh, or brown, beſpangled with minute yellow ſpots, which, as it approaches the ſides, is bordered with a narrow ſtreak of yellow. From this laſt, the belly is of a reddiſh colour, and interſperſed with a number of yellow ſpots. His head is ſmall. But that which claims our attention moſt particularly, is the ſtructure of his mouth. This is of a triangular figure, and compoſed of two lips, which are made to conform at pleaſure, to the convenience of the animal. Within theſe are ſituated three ſolid teeth, ſo ſharp and ſtrong, that, they are capable of piercing the ſkins of men, or even thoſe of horſes, or oxen. A little poſterior, is obſerved a ſmall protuberance, anſwering, in appearance, and moſt probably in uſe, to a tongue, which, when flaccid, very exactly cloſes all the

cavity within the teeth. With this ſtructure of the leech, his thirſt of blood is proverbial. Hence Horace,

> Quem vero arripuit, tenet occiditque legendo,
> *Non miſſura cutem niſi plena cruoris hirudo.*

Whether accident or deſign has preſented him with his prey, the firſt care of the leech is to prepare an opening for the exit of his favourite repaſt. This is done by inſerting his three fangs into the ſkin. Next, withdrawing theſe, he cloſes his lips round the wounds and retracts his tongue farther into his mouth, ſo as to produce a vacuum. By which means, the weight of the atmoſphere being removed from the blood-veſſels embraced by his lips, while its force remains the ſame on the parts without, the blood is forced into the mouth ſo ſtrongly, as to fill his twenty-four little ſtomachs, containing in the aggregate from two to three drachms of blood, in the ſhort ſpace of a few minutes.

From what has been ſaid, it appears there is but one ſpecies of leech commonly employed for medical purpoſes. From hence it follows, the opinion that the bad effects from their bites proceed from the quality of the leech, muſt be erroneous. For, this being admitted, to ſuppoſe theſe are induced by a venomous quality, is to ſuppoſe, that ſome individuals are endowed with a quality with which others of the ſame ſpecies of animals are not; which would be abſurd. I am aware, it may be ſaid that this noxious quality of the leech is adventitious, and that it depends upon the qualities of the waters from which they are taken. But this ſuppoſition, ſtill, does not ſolve the difficulty; for as they are all kept a conſiderable time before uſe, in clean water, and this often changed, their ſuppoſed poiſonous qualities, were they adventitious, muſt be waſhed off, and we, conſequently, ſhould never witneſs any bad effects from their bites.

The fallacy of the generally received opinion, further appears from the organization of the inſect. For, as the teeth

are deſtitute of punctures in their points, they are not calculated to the introduction of any ſubſtance into a wound. And, were it even poſſible any poiſonous particles ſhould adhere to the teeth, and be introduced with them, as the animal feeds by ſuction, its very functions, joined to the conſtant efflux of blood from the punctures, muſt prove a certain preventive to theſe particles remaining long enough to produce any miſchievous effects.

Much more might be ſaid, but as this is deemed ſufficient to prove that injurious conſequences from the bites of leeches cannot depend upon any innate or adventitious quality in them, I ſhall diſmiſs the ſubject, and proceed to inquire, on what theſe conſequences do depend.

I attribute them to the ſtate of the ſyſtem, or to that of the particular part, to which they are applied.

I conclude this to be the caſe,

1. Becauſe, the effects mentioned, never occur, except in ſuch caſes as evidence the preſence of a morbid diatheſis, general or local, in the part to which they are applied.

2. Becauſe, they frequently do occur where ſuch diatheſis exiſts.

Of the truth of the firſt of theſe poſitions, we have daily proofs in the application of leeches in ophthalmia, where the diſeaſe is topical and they are not applied immediately to a part under inflammation. In this caſe, bad effects never ſucceed.

Caſes of inflammation, ulceration, or gangrene, from the application of leeches in a general morbid diatheſis, or immediately to a part under diſeaſe, have occurred under the obſervation of almoſt every practitioner who has ever been in habits of employing them.

I have witneſſed many; the following of Capt. R. A. mentioned in Vol. I. No. 2. communication the 10th, of the Philadelphia Medical Muſeum, ſeems, to me, one of the moſt impreſſive, and well calculated to my purpoſe. In this caſe the diatheſis had a ſtrong tendency to gangrene.

When I firſt ſaw him, on the 31ſt of July laſt, a partial ſphacelus had taken place in one of the nates, and the cellular membrane of the perinæum was deſtroyed. The ſcrotum was nearly diveſted of cuticle and much tumefied; but, as I underſtood, had ſubſided ſince the attendance of Doctor Ruſh. I was informed bliſters had been applied to the ſcrotum and to the parts affected with ſphacelus on the 29th, when the Doctor was firſt called in; and leeches to the ſcrotum on the 30th. Auguſt 1ſt, there was an appearance of gangrene on the ſcrotum.—Auguſt 2d, appeared ſeveral ſphacelated ſpots, the ſize of the finger nail, immediately *on the parts of it to which the leeches had been applied.* The ſame day they were punctured with a lancet. Auguſt 3d, the ſphacelus had extended ſo far as to deſtroy nearly one half of it. On the ſame day, in concurrence with Doctor Ruſh, I removed with the knife, ſeveral large portions of ſphacelated ſkin and cellular membrane from the nates and perinæum. On the 4th I laid open the perinæum, in its whole length, from near the anus to the ſcrotum, down to the urethra. The 6th I removed with the ſcalpel, *all that part of the ſcrotum to which the leeches had been applied,* being nearly one half, down to the teſtis.

The leech produces the injuries here noticed, by the formation of a vacuum on the part to which he is applied. By this means, the uſual ſupport from the preſſure of the atmoſphere being removed from a part of the ſyſtem, while it remains the ſame on other parts, the tone of the part under the influence of the leech is diminiſhed, while, at the ſame time, and by the ſame cauſes, that of the latter is relatively increaſed.

And hence ariſe two moſt certain and active prediſpoſing cauſes of inflammation, a general increaſe of tone and a local debility.

From this view of the ſubject, I conclude that bad conſequences are to be apprehended from leeches,

1. When applied in an inflammatory diatheſis before general bleedings have been performed.

2. In a general gangrenous diatheſis.

3. In an extremely irritable habit.

4. And laſt, to a part actually affected with inflammation, ulceration, or gangrene.

Hiſtory of a Caſe of Palſy, cured by Lightning. Alſo, Minutes of a Caſe of Yaws: in a Letter from DR. THOMAS HUMPHREYS, *of Lynchburgh, Virginia, to* DR. BENJAMIN RUSH, *dated Nov. 1ſt*, 1803.

MRS. Suſanna Wiatt, of the ſtate of Virginia, and county of King and Queen, a lady of great reſpectability, family, and fortune, informed me, that about the 49th year of her age, while on a viſit at ſome diſtance from home, a conſiderable fall of ſnow took place, followed with hail and ſleet, accompanied with ice; next day the weather being ſomewhat ſettled, on her return home, her carriage broke down, which occaſioned a walk of near ten miles, and took her part of two days to accompliſh: on her arrival at home, ſhe found herſelf in a profuſe ſweat, but next day felt chilly all over, nor were her friends able, from every poſſible exertion, to reſtore her natural warmth; ſhe felt herſelf in a very great deal of miſery, and notwithſtanding medical aid being called in, and her health partly reinſtated, yet her pains in a ſhort time became exceedingly ſevere, and in leſs than a year, ſhe partly loſt the uſe of both her arms.

An eminent phyſician, Dr. John Brockenburry, of Eſſex county, Virginia, being called to attend her, among other parts of his treatment, electrified her once a fortnight, and ſometimes twice in a week, for two years, without any other apparent advantage whatſoever, than that of deriving a mere temporary relief. Three years having now expired; in the courſe of the fore part of the ſummer, ſhe was more frequently electrified than before: ſome time in the month of

July, about 3 P. M. being in a lower room in the dwelling-houſe, one of her ſons and two negro ſervants being alſo preſent, (the atmoſphere at that time being heavily charged with electric matter), juſt as ſhe got up from the dinner table, and had reached the ſide of a bed that ſtood in the ſaid room, a ſudden and violent exploſion took place. She was inſtantaneouſly ſtruck down, and fell motionleſs acroſs the bed.

The buſhes that were in the chimney were burnt, and ſeveral dead birds were found there; all the plaſtering in the inſide of the chimney was ſtripped off, reduced to a very ſoft conſiſtency, and was ſpattered all over the room: ſo hot was this ſoft mortar, that whatever part of the negroes ſkins it was daſhed againſt, was immediately bliſtered. There was alſo a large round ball, formed of this ſoft or fuſed mortar, which rolled along the floor of the room until it came to a cat-hole in the door, and being larger than the hole, it remained there apparently red hot. The young gentleman touching it with his finger, was ſeverely burnt; on puſhing a ſtick into it, in a few minutes its action on the encloſed wood exhibited demonſtrative proof of the intenſity of its heat. In the middle of the ceiling of the room, was a large black circle or ring, with a white ſpot exactly in the centre. Query, What was this owing to? was it owing to the back-ſtroke or reaction of the electric fluid? no injury being done to any of the inſide plaſtering, either on the ceiling or walls. And again, upon what philoſophical principle can the inſtantaneous fuſion of this intenſely exſiccated mortar be accounted for? But to return to the lady.

The young gentleman, her ſon, and the two ſervants who were none of them otherwiſe hurt, than by the burning plaſtering as already mentioned, after recovering from the ſurpriſe occaſioned by the violent and dreadful report, they, with great preſence of mind, looſened her clothes, ripped open her ſtays, and, by ſprinkling water on her, ſhaking and pulling her about, and uſing conſtant friction, after ſome ſhort time, recovered her: ſhe demanded to know what they were doing, and what occaſioned all the confuſion apparently about her, and re-

ceived for anſwer—that the houſe had been ſtruck with lightning, and that the firſt they obſerved of her, ſhe lay acroſs the bed to every appearance dead. As ſoon as ſhe was ſufficiently recovered to walk, ſhe went up ſtairs, to examine whether the houſe had not taken fire in any of the upper apartments; on coming down ſtairs ſhe made a falſe ſtep, and inſtantly ſtretching out her arm, caught hold of the hand-railing of the ſtair-caſe, and exclaimed aloud to her ſon, to come and behold how miraculouſly ſhe had recovered the uſe of her hands, and to obſerve with what eaſe ſhe could extend her arms, and graſp, at pleaſure, the banniſtering of the ſtair-caſe.

Next day the phyſician coming to electrify her as uſual, was pleaſed and aſtoniſhed, as well as agreeably ſurpriſed, to find that his patient had experienced that complete relief, from a moment's application of atmoſpheric electricity, adminiſtered by nature's omnipotent arm, which two years unwearied application of artificial electricity, was not able to effect.

None of the other people in the room being ſtruck but the lady, the phyſician ſuppoſed her ſyſtem was, (in conſequence of the many and repeated electrifications ſhe had undergone, and particularly of late), rendered much more ſuſceptible of the electric fluid, than any of the others in the room. It is now about twenty years ſince that time, and the lady informed me, ſhe never has had the ſlighteſt touch of the rheumatiſm ſince ſhe received the ſaid ſhock. She now enjoys good health.

Memorandum for Dr. Humphreys.

IN the year 1770, about the month of June, I had a number of African ſlaves for ſale; among them was a lad about eighteen years of age, who was a miſerable object, from the diſorder called the yaws; he was vaſtly more afflicted with it than any perſon I ever ſaw before or ſince; from his head to his feet he was thickly ſet with thoſe ſorts of knots or ulcers, which that diſorder produces when it is in its worſt ſtages. A Doctor Ellis lived at the place, who had very deſervedly ac-

quired great reputation for his profeſſional merit. I applied repeatedly to him to cure this lad: he did not actually refuſe, but ſignified it would be tedious, the cure doubtful, and probably more expenſive than he was worth. In this ſituation I ſhould not have heſitated to have given him away to any one that would have accepted of him. Among my ſlaves there were a few who had been living for ſome time at one of the Britiſh factories in Africa, and underſtood a little of the Engliſh language. Obſerving that I was at a loſs what to do with this diſeaſed ſlave, they undertook to cure him, to which I readily conſented, but with little faith in their ſucceſs.

The Cure was as follows.

THEY took him to a running ſtream of water, laid him in it, two confined his feet, two his arms, and one held up his head to prevent drowning; two then operated in ſcrubbing off the knots and ulcers in the running water. The operation muſt have been dreadful, for they ſcrubbed him with corn-huſks, and even ſand; the blood and matter and ſcabs were conſtantly waſhed down the ſtream: when every ulcer was thus ſmoothed away and cleanſed by the running water, they led him up naked to their houſe, and wiped him; then they made an ointment of the juice of limes made boiling hot, and mixed to a proper conſiſtence, with powdered iron ſcales taken from a blackſmith's anvil: with this ointment they anointed every ſore with a feather; the ſame operation was continued for four weeks; every ſix or ſeven days, they gave him frequently a decoction of ſome roots, which, I believe, operated as a purgative; in about eight weeks they completed a cure; in three or four months he became ſleek, fat, and a very likely fellow; all the ſores ſkinned over, and no ſcar remained. I ſold him afterwards, and never heard that the complaint returned. Doctor Ellis was not leſs aſtoniſhed at the cure than I was; he could not account for it. He ſuppoſed the iron and lime juice formed a ſpecies of ſalts, with which he was unacquainted

He promiſed to give the ſubject full conſideration, and to inform me of the reſult; but he died ſoon afterwards, and I found nothing among his papers, but a ſtate of the caſe ſimilar to the above.

DAVID ROSS.

Proof of the Efficacy of Vaccination; together with a Caſe of co-exiſting Small Pox and Cow Pock.

PHILADELPHIA, *December 4th*, 1804.

SIR,

I HAVE to regret, that my occupations prevented me from communicating to you ſooner, a remarkable caſe that I had lately under my care. It militates ſo much in favour of the vaccine inoculation, that, I hope, it will find the publicity it deſerves, through the medium of your Muſeum.

On the 8th of October laſt, I was called to viſit Mrs. B——, of this city. An intenſe fever, and all the other ſymptoms, joined to the information that ſhe gave me of having been expoſed to the infection of the ſmall pox, which ſhe never had, left no doubt in my mind, of the nature of her diſeaſe. I bled her, and ſhe found herſelf much relieved. She then participated to me her apprehenſion for her four children, who never had the ſmall pox, and deſired a ſpeedy inoculation; leaving entirely to my own judgment, the mode that I ſhould think preferable. I determined, without heſitation,* for the vaccine; and, wiſhing to procure freſh matter, I poſtponed the operation until the next morning; but, Mr. B—— being abſent from

* I ſay without heſitation, becauſe I had once before vaccinated a babe, whoſe father was then ſick with a confluent ſmall pox: they both ſlept in the ſame bed; and it ſucceeded ſo well as to guard the child againſt the infection of the ſmall pox.

home, I was requeſted to defer it again to the next day, that he might give his approbation.

On the 10th, I vaccinated her four children, and finding then that the eruption was going on pretty faſt with the mother, I deſired the children to be kept from her room; but ſeeing afterwards, that no attention whatever was paid to comply with my repeated requeſt, and two days being already elapſed, without the leaſt appearance of the vaccine infection, I inoculated them all with variolous matter taken from the mother.

Mrs. B—— was ſo well that I did not viſit her until the 14th, when I found that the variolous infection had produced the deſired effect upon her children, and, to my great ſurpriſe, that Betſey B——, the eldeſt daughter, about nineteen years of age, who had been, from the beginning, nurſing her mother, exhibited an evident mark of vaccine infection.

Deſirous to have a full view of the conteſt between the two diſeaſes, and anxious to know which would gain the victory, I viſited my patient every day, flattering myſelf with the hope, that the inſertion of the vaccine virus having been made two days previous to that of the ſmall pox, the areola would appear before the time of the eruptive fever of the ſmall pox, and counteract the variolous infection.

The 19th, no ſign of the areola.

The 20th, fever, pain in the arm-pit, faint appearance of the areola. Her brother with the eruptive fever of the ſmall pox.

The 21ſt, beautiful areola, continuation of the fever, pain much increaſed, and ſwelling of the glands in the axilla. I was then ſtruck with a very ſingular and unexpected phenomenon. An areola, ſimilar in colour and ſize to the vaccine areola, was ſurrounding the variolous pimple, and continued as long as the other. Another phenomenon, no leſs worthy of remark, was, that although the variolous and vaccine pimples were ſcarcely one inch and an half diſtant from one another, there exiſted a line of demarcation, with the natural colour of the ſkin, between

the two areolæ, their circumferences being flattened inſtead of intermixing with one another.

Theſe phenomena were ſo unexpected, that I called ſeveral times at your houſe, to have you an eye-witneſs of the caſe, but unfortunately never met you within. Meeting with Doctor Paſcalis, and relating the caſe to him, he deſired me to let him ſee this patient, and found it a very curious and intereſting caſe.

I ſhall now remark, that all the other children who were inoculated for the ſmall pox at the ſame time with B. B——, underwent a regular courſe of the diſeaſe, and ſhe eſcaped it, although ſhe had the nurſing of the whole of them.

Not feeling ſatisfied of the reſult, without teſting the matter of this vaccine, on the 22d, I took matter from both pimples, vaccine and variolous.

With the vaccine, I vaccinated three children, who received a very genuine kine-pock, without the leaſt ſymptom of variolous infection.

With the variolous, I alſo inoculated three children, every one by a double puncture, but none of them received any infection. One of theſe three laſt children was inoculated afterwards with other matter of the ſmall pox, and took it immediately.

A young boy was lately inoculated by me, with variolous matter four days after vaccination, the ſmall pox produced no effect but for a few days.

Leaving any one to make his own remarks, I conclude by expreſſing the moſt earneſt wiſh, that every one would exert his utmoſt endeavours to extend the benefits of ſuch a bleſſing as vaccination.

Yours, ſincerely,

J. C. ROUSSEAU.

To J. Redman Coxe, M. D.

On the Cure of Chronic Diarrhœa, &c. in a Letter from DR. WILLIAM HAYES, *of Dorcheſter County, Maryland, dated January 8th,* 1801.

SIR,

I NOW preſent you with a few remarks on our late epidemic.—I found ſeveral under the moſt profuſe ſweats, without obtaining any relief. On Hooper's Iſland, they had more rain than where I live; their fevers higher; the diſcolouration of the ſkin but ſlight, and no black vomitings; the alvine diſcharges of many were black bile. Where there was leſs rain, there were ſeveral inſtances of the coffee-ground vomiting; eſpecially after it aſſumed the form of dyſentery.

I tried the effect of the ſhower bath on two patients under this form of the epidemic, (being baffled in other remedies), the effect was, a natural ſtool before they could be got to bed. They were laid in blankets, a perſpiration enſued, and the teneſmus vaniſhed for the day. At night the teneſmus, &c. returned; the next day the bath was repeated with the ſame good effect; the third day the bath was objected to. On the third or fourth day after, they died; one with the coffee-ground vomiting. The ſyſtem was well loaded with mercury, at the time of uſing the bath, yet no evil enſued. The bath ought to have been uſed at leaſt twice a day.

In the year 1792, a Mr. Henry Travers, with chronic diarrhœa of two or three years ſtanding, applied to me after trying ſeveral other gentlemen; I recommended the bath with anodynes, which in a few weeks reſtored him to perfect health.

In 1798, a ſimilar caſe occurred, but not of ſo long ſtanding: the ſame remedy had the deſired effect.

In fact, the ſhower bath is my principal remedy for the cholera infantum, diarrhœa, and intermittents in children.

Your moſt obedient, and
Very humble Servant,
WILLIAM HAYES.

DR. BENJAMIN RUSH.

Caſe of a Luxation of the Thigh-bone, forward, and the Mode of Reduction. *By* P. S. Physick, M. D.

Philadelphia, 12th April, 1805.

In February 1805, a man was brought to the Pennſylvania Hoſpital, in conſequence of a diſlocation of the thigh-bone at the hip-joint, which had taken place the day before, in the following manner. As he was riding on a ſled which was drawn rapidly along, with his legs extended over its ſide, the foot of his left leg became entangled in the gears of a team of horſes ſtanding in the road. A great abduction of the leg and thigh was thus ſuddenly made, by which the head of the bone was forced out of its ſocket, and lodged on the os pubis, directly before the acetabulum. In this ſituation it formed a tumor, plainly to be ſeen and felt in the groin, under Poupart's ligament. The foot and knee were turned outward, the thigh was extended with the leg bent backwards. By a very particular examination it appeared that the diſlocated limb, was a little longer than the other, though the difference in length was very inconſiderable.

After an unſucceſsful attempt, which it is unneceſſary to deſcribe, the head of the bone was replaced by the following means.

The patient being laid on his back on a table covered with a mattraſs, a firm ſtrap was paſſed between his thighs, and the ends of it being carried upwards, before and behind his body, were faſtened to a ſtaple oppoſite his left ſhoulder, for the purpoſe of fixing the pelvis, and making the counter-extenſion. This ſtrap was applied in ſuch a manner, as to act as much as poſſible againſt the injured ſide of the pelvis, and was carried, therefore, between the diſlocated thigh and the ſcrotum, and then over the tuberoſity of the iſchium of the ſame ſide. A ſtrong towel was then faſtened with a roller upon the leg juſt below the knee, and the leg was bent to a right angle with the thigh.* The ends of this towel were tied together, and a

* In the firſt attempt, two towels had been faſtened on the thigh juſt above the knee, one on each ſide, but they were ſoon obſerved to ſlip.

pulley was hooked to it for the purpoſe of making the extenſion.

In order to draw the head of the bone directly outwards, a firm ſtrap was paſſed over the pelvis below the criſta of the ilium of the injured ſide, and the ends of it faſtened to a ſtaple oppoſite the ſound ſide of the patient's body. Another ſtrap was applied over the upper part of the diſlocated thigh, the ends of which were faſtened to a pulley oppoſite the injured ſide of the patient.

After the application of this apparatus, before commencing the extenſions, the man was copiouſly bled, with the intention of cauſing him to faint, an effect, however, which was not fully produced, though he loſt a conſiderable quantity of blood, by which he was much weakened. In this ſtate of debility the extenſions were repeated, and, at the ſame time, the leg being bent, was moved inwards and outwards ſo as to rotate the thigh-bone as much as poſſible, and thereby to aſſiſt in diſlodging its head. To prevent the abduction of the thigh by the ſtrap over its upper part, the knee was preſſed inwards by the hand of an aſſiſtant applied on its outſide.

In this manner ſeveral attempts were unſucceſsfully made, but, added to the bleeding, they exhauſted the patient's ſtrength ſo much that his body became covered with a cold ſweat. In this ſtate of weakneſs the extenſions were directed to be again repeated with greater force than had before been employed, and by theſe the head of the bone was ſuddenly reduced to its natural ſituation. The patient in a few minutes recovered ſufficiently to move his thigh in every direction, ſuffered very little pain afterwards, and was diſcharged from the hoſpital, cured, in three weeks.

In order that the mode of reduction may be more eaſily underſtood, the encloſed ſketch is herewith ſent.

Reference to the Plate.

a. Repreſents the ſtrap paſſed between the ſcrotum and thigh, and over the tuberoſity of the iſchium, faſtened to a hook, for making the counter extenſion.

b. A ſtrong towel ſecured below the knee with a roller.

c. A pulley hooked on the towel for making the extenſion.

d. The ſtrap paſſed over the pelvis, below the criſta of the ilium, nearly at right angles to the body, and faſtened to a hook oppoſite the right ſide. . The uſe of this ſtrap was to fix the pelvis, while the head of the thigh-bone was drawn directly outward by the ſtrap *e*, paſſed round the upper part of the thigh at right angles to it.

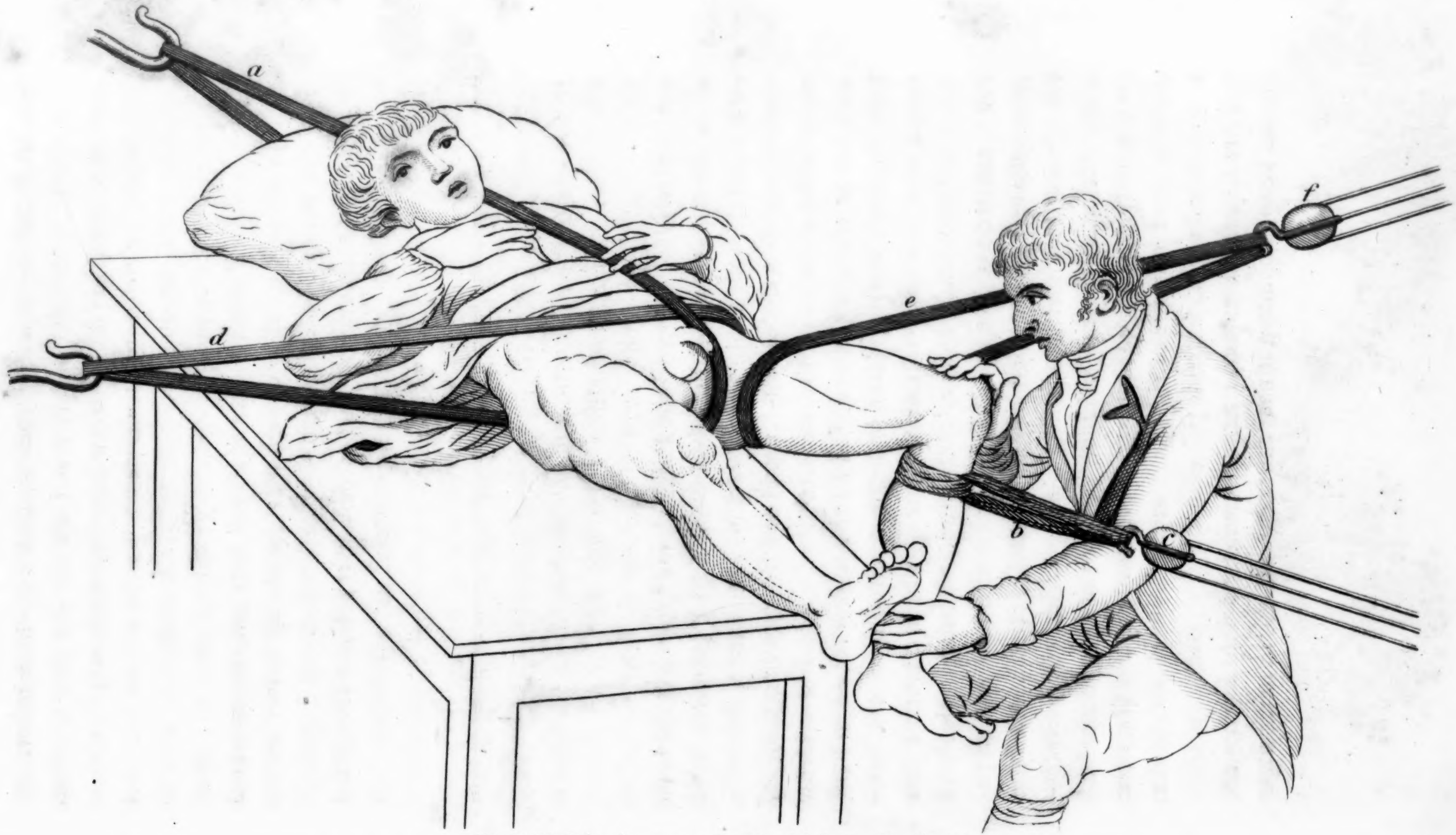
f. The pulley hooked to this ſtrap.

To avoid excoriation ſoft flannel was every where interpoſed between the ſtraps and the ſkin.

Hiſtory of a Caſe of Luxation of the Head of the Femur, upwards and backwards. By the Editor.

A MAN belonging to the Philadelphia frigate, in careleſſly running along the cable, which had been rendered very ſlippery with mud, fell, whilſt his legs were widely diſtended, and ſtruck the left femur, on the great trochanter, where a ſlight eſchar of the abraided cuticle was ſtill evident. This happened on the 8th of July, 1802, and was ſaid to have been reduced, but from the account received from the patient, it was rendered doubtful. On the 12th, I admitted him into the Pennſylvania Hoſpital. He ſuffered much pain, and there was great tenſion and ſwelling of the thigh, and apparently powerful contraction of the muſcles. The head of the bone was diſtinctly felt under the glutæi muſcles, the great trochanter being conſiderably higher than in the other limb, and conſequently the affected limb was much ſhortened. The knee and foot were turned inwards, and any attempt to rotate the limb outwards, gave extreme pain.

To reduce this luxation, I fixed the patient firmly down with a broad ſtrap, by paſſing it over the abdomen, and then through



Engraved by Lawson Fenton Philad.a Medical Museum

two apertures of the table on which he was placed, buckling the ſtrap below. To the lower end of the thigh, I fixed a broad and firm leathern brace, which could be tightened at pleaſure, and having ſeveral ſtrong iron rings through which napkins might paſs to make extenſion. I next placed a ſoft napkin in the crotch, paſſing it over the groin, to prevent attrition from a ſtrong ring towel, which I paſſed in the ſame direction round the thigh, and after a twiſt or two to prevent ſlipping, I directed a ſtrong aſſiſtant to put it round his neck, and ſtand upon the table, ſo as to have complete command of this part of the apparatus.

The man being placed on (or nearly ſo) his right ſide, I directed the aſſiſtant at the ring towel to pull upwards, ſteadily, yet firmly: the bone, I found, followed readily, and when it was moderately raiſed from its former poſition, I deſired him to hold the towel without yielding any of the advantage he had gained. And now the other aſſiſtants began to extend the thigh, which was moderately bent upon the pelvis. After keeping up a firm, but equal extenſion for, perhaps, two or three minutes, I took the knee in my left hand, aſſiſting with my right, at the joint. On giving the order, the aſſiſtants who extended and elevated the femur, at once relaxed entirely their operations, whilſt, by a ſudden rotation outwards of the knee, and firmly puſhing the head of the bone forwards at the ſame time, it flew into the acetabulum with a ſnap, and attended with a ſenſation of the action of an elaſtic body which had been forcibly diſtended.

The limb immediately reſumed its proper appearance; and from exquiſite pain, the man declared himſelf perfectly eaſy.

Having never ſeen a caſe of luxated femur, I was fearful the bone might not retain its poſition without ſome aid, I accordingly fixed it firmly to the pelvis for a few days; the preceding caſe, however, ſhews that this might have been omitted.

As the man was conſiderably feveriſh, I ordered him a purge, and to loſe twelve or ſixteen ounces of blood. He was much relieved by the operation of the medicine; and on the

fourth day, I took away the dreſſings I had uſed to fix his limb. In about ten days he walked with crutches, and in two weeks he was diſcharged well.

Auguſt 1ſt, 1802.

Account of an Epidemic Ophthalmia. *By* DR. SHAW.

February 12th, 1803.

DEAR SIR,

I TAKE the liberty of communicating to you, a brief account of an ophthalmia, which appeared in the alms-houſe of this city laſt year, among the children. It proved highly contagious, inſomuch, that in twenty-four hours after the admiſſion of children into the nurſery (where it was chiefly confined), their eyes were entirely cloſed with the exceſſive inflammation. The cauſe could not be diſcovered. Dr. Phyſick and myſelf had the charge of the children, many of whom were under two years of age, and none exceeded ſeven. After trying every thing that could be thought of, without effect, recourſe was had to blood-letting, which had the deſired effect. Many of them I bled as many as twenty times in the courſe of about ſix weeks; the quantity taken at each bleeding, was from two to four ounces: of between thirty and forty caſes, only one remained uncured, and that was in conſequence of rubbing the eye. This communication I thought proper to make at this time, becauſe it, in my opinion, ſhews the urgency of the lancet in the diſeaſe in queſtion, in as high a degree as in pleuriſy or any other inflammatory complaint whatever.

I am, Sir, your very humble Servant,

WILLIAM SHAW.

DR. BENJAMIN RUSH.

Obſervations on the Uſe of the Nitric Acid in Syphilis. By JAMES HUTCHINSON, M. D.

THE powers of the Nitric Acid in ſyphilitic affections muſt, by this time, be nearly known. Experience has proved, at leaſt in this country, that the acid ought not to be uſed in every caſe of lues venerea. I do not mean to aſſert that it ſhould never be employed in this diſeaſe; on the contrary, I am convinced that it has been inſtrumental in ſaving the lives of a variety of ſyphilitic patients; but I alſo believe that it has frequently cauſed a vaſt deal of miſchief.

The injurious effects of the medicine as it is commonly preſcribed, are exerted on the teeth, on the ſtomach, and on the inteſtines.

The teeth are frequently brought to premature decay, by the corroſion of the enamel from the acid: this however may often be prevented, by ordering our patients to drink it from a tea-pot with the ſpout thruſt far back into the mouth.*

The tone of the ſtomach is greatly injured by this remedy, ſo much ſo, that I have known dyſpepſia brought on by the uſe of it.

The leaſt of the diſagreeable conſequences of the acid, is its cauſing a diarrhœa; but this may be eaſily removed by the uſe of laudanum.

The laſt and moſt pernicious injury which attends the employment of this remedy, is, that in almoſt every caſe of the firſt ſtage of this diſeaſe, it does not check its progreſs. The inſtances are ſo numerous in which I have ſeen it fail, that I think it needleſs to relate them. I ſhould not ſpeak with this confidence, had I not ſeen it preſcribed, and uſed it myſelf, in a great number of caſes in the Pennſylvania Hoſpital, and in private practice.

* Or, what anſwers as well, by drawing through a quill, the medicine from a wine glaſs. E.

The forms of ſyphilis in which I witneſſed the moſt happy effects of this remedy, were all of them of a ſecondary nature; ſuch as ulcers in the throat, eruptions and blotches on the ſkin, and ſwellings of the perioſteum and bones.

In nine caſes of ulcers of the throat, the acid was uſed: six of them were cured by it, and the remaining three by mercury.

In ſixteen caſes of eruptions and blotches on the ſkin, the acid was preſcribed: nine were cured by it, the others yielded to mercury.

In twenty-three caſes of ſwellings of the perioſteum and bones, in which the acid was uſed, five were cured, and ſix relieved: in the remaining twelve, mercury was uſed, eight of whom were cured, and four relieved.

Thus, from what experience I have had with this medicine, I may ſafely conclude, that it ſhould never be uſed in the commencement of this diſeaſe, but that in ſecondary ſtages of it, it is a valuable remedy.

March 1ſt, 1805.

Obſervations on Vaccination. By the Editor.

THE continued prejudices which are oppoſed to the practice of vaccination, and which are ſtill met with in all quarters, call ſeriouſly for the active interference of the well-wiſhers to this invaluable prophylactic throughout the globe. The favourable opinion entertained of it, no longer reſts on the aſſertions and experiments of a few; but is dependent on the united teſtimony of hundreds and thouſands of the moſt learned and experienced phyſicians, as well as of other perſons. This being a fact ſo well aſcertained, how ſhall we explain the un-

common exertions which are made by many, to deſtroy that confidence in the vaccine, which others are ſo anxious to increaſe? I fear, in attempting to develope this, we ſhall view a miſerable portrait of human nature, actuated, in many inſtances, by the moſt ſelfiſh motives; in others, by prejudice founded on error or falſehood, or on both; whilſt others again oppoſe *it*, in common with the ſmall pox, as an impious act in tempting the ALMIGHTY, by creating diſeaſes, which his Providence alone ſhould direct.

Let us examine theſe various ſources of oppoſition fairly, and endeavour to obviate the pernicious effects which their introduction has occaſioned—and, firſt, we muſt view this oppoſition as ariſing from the moſt debaſed and ſelfiſh motive, an unqualified attention to ſelf-intereſt, which induces many of the practitioners of medicine (chiefly, I am happy to add, of the *Irregulars*, with whom our city, in common with the reſt of the world, is infeſted,) wilfully to ſhut their eyes againſt the light of truth, and to extend that intellectual blindneſs to others, who depend on their judgment as a guide.

Among this claſs of phyſicians, ſome anticipate a greater harveſt from upholding the practice of inoculation for the ſmall pox, inaſmuch as this coincides with the prejudices of the multitude, whoſe favour they hope to ſhare; whilſt a candid acquieſcence in the ſuperiority of vaccination, might leave them with empty purſes, in that ſituation to which their ignorance ſhould level them. There is a man of this claſs in our city, who has long been celebrated as an inoculator for the ſmall pox; who impudently promiſes the parents as few, or as many puſtules on their child, as they may wiſh for. This perſon, whoſe knowledge is below mediocrity, has the aſſurance to traduce the vaccine on all occaſions; though, from what is above ſtated, the reaſons for this conduct may be eaſily ſeen. This is not all—This very man has had repeated inſtances of his patients being attacked with ſmall pox, after his aſſurances to the parents of the perfect ſecurity of the previous inoculation: and

ſeveral inſtances of death, from this ſource, might be traced with little difficulty. In ſome of theſe caſes, I have heard, that when the ſecond attack had confounded even him, he has not ſcrupled to ſay, that the previous diſeaſe was the cow pock, and that they might judge from this, how little credit ought to be attached to it. Thus is the credulity of a fond parent played upon, to inſure the ſucceſs of the ſole deſign of this, and other impoſtors in medicine—that of wringing as much as poſſible, from the earnings of the poor and needy, among whom their practice is chiefly confined. Humanity has no place in their hearts: this is a plant, to them of foreign growth; and is denied admittance with the moſt ſcrupulous attention.

When pains are thus taken by ſuch baſe and worthleſs members of the community, to propagate the moſt atrocious falſehoods, we cannot wonder, that prejudice ſhould ſo powerfully oppoſe the vaccine, in the minds of many. With every wiſh for truth, they cannot but believe what they hear ſo frequently and ſo confidently aſſerted; and on that conviction they muſt be allowed to act. What is every perſon's buſineſs is ſaid to be that of no one; and, in this inſtance, it is peculiarly applicable. Were theſe perſons, who are thus groſsly deceived, to inquire for themſelves reſpecting thoſe caſes, ſo confidently referred to, as caſes of ſmall pox after vaccination, they would not diſcover an appearance of truth in four-fifths of them; whilſt in the remainder, they would find, the hundred tongues of that noted liar *Fame*, had produced a mountain from a mole-hill.

——" Fama loquax, quæ veris addere falſa
" Gaudet, et e minimo ſua per mendacia creſcit."

As to the third ſet who oppoſe vaccination in common with variolous inoculation, under a perſuaſion of the impiety of the meaſure, by ſuppoſing they thereby tempt the ALMIGHTY; we can only commiſerate that ignorance which can lead to an opinion ſo erroneous, and ſo pregnant with evil to mankind.

This idea, if conſiſtently purſued, ſhould lead us to bend beneath the various ills of life, without an exertion on our part to oppoſe them, by ſuch means as a beneficent CREATOR has placed in our power. Againſt ſuch ignorance, it is ſcarcely poſſible to oppoſe a barrier: fortunately, it carries its puniſhment with it, and muſt ultimately work its own cure, when woful experience teaches them that their doubts have been ſo greatly unfounded.

As my endeavours to promote this great bleſſing, have ariſen from a firm conviction of its advantages, founded on experience; I am diſpoſed to regard oppoſition to it, on any other ſcore than thoſe above mentioned, as ariſing from a total ignorance of its nature and properties. Still, however, with the numerous atteſtations in its favour before us, I cannot but conſider thoſe parents as highly culpable, who do not prefer a previous trial of the vaccine, to that moſt loathſome diſeaſe the ſmall pox. If the vaccine was attended with the ſame dreadful ſymptoms which ſo often accompany the ſmall pox, ſome excuſe might be offered in mitigation of their folly, which riſks the life of a darling child, even under the boaſted ſafeguard of inoculation. It is true, that inoculation, before the introduction of vaccination, deſerved the warmeſt encouragement, becauſe its fatality is ſmall indeed, when compared with that ariſing from the natural contagion; but the ſame reaſons which then operated ſo forcibly in favour of inoculation, now act with ten thouſand times more force in favour of vaccination, becauſe, as far as the records of vaccination extend, we have no well atteſted caſe of mortality from it; and, indeed, to thoſe who are acquainted with its nature, it muſt appear altogether incredible, that a fatal caſe ſhould ever occur. Were even the chances of death as great from this, as from inoculated ſmall pox, it would ſtill be our duty to employ it, becauſe it is confined ſolely to the individual; whilſt the ſmall pox communicates its influence to all who come within its deſtructive focus.

Let me aſk, who are the opponents of vaccination? In general a ſet of ignorant and deſigning men, who have no view

beyond their own intereſt; whilſt the firſt characters in every region to which it is extended, are its warmeſt and moſt decided ſupporters. This alone ſhould ſilence every clamour; for, can it be ſuppoſed, that men would act ſo totally in oppoſition to their character and intereſt, as to recommend the vaccine, when the neceſſary conſequence of their patients taking the ſmall pox at any ſubſequent period, muſt be, a decided obligation to attend them gratuitouſly, and at the ſame time, to bear all the indignant clamour of the friends of the innocent ſufferers from their folly.

It is reaſonably to be ſuppoſed, that the introduction of a new diſeaſe, like the vaccine, ſhould have been attended with miſtakes, before all its peculiarities were diſcovered. That this unfortunately has been the caſe, is true; but are we to argue againſt its uſe, from evils reſulting evidently from ignorance? Whatever may have been the miſtakes at firſt, and whatever may ſtill be the miſtakes of young beginners, before they have made themſelves thoroughly acquainted with the unfailing characters of the diſeaſe; I will venture to ſay, that no diſeaſe exiſts, in which fewer miſtakes can, or ought to be made; for it poſſeſſes a character ſo excluſively its own, that I know of no diſeaſe with which it can poſſibly be confounded. With this character of the diſeaſe, it is the buſineſs—it is the bounden duty of every practitioner to acquaint himſelf; ignorance ought here to be no excuſe—where the path is as clear as noon-day.*

* By accident, indeed, the diſeaſe may, in its early ſtage, be deſtroyed; and, perhaps, this may have been the caſe in ſome of thoſe inſtances of ſmall pox, ſaid to have occurred after vaccination. A phyſician ſees a regularly advancing vaccine pock on the fourth or fifth day; and at this period when it is ſimply a *local* affection, an accident rubs off the pock, and the diſeaſe is, in all probability, nothing more than the effect of ſimple, or eryſipelatous inflammation. Some caſes of this deſcription I have ſeen, which, at an early period, ſhewed the character of the vaccine; though it was totally obliterated by rubbing, on the fourth, fifth, and ſixth days, ſo that I never could detect the vaccine again; yet conſiderable inflammation on the eighth day (in one deſtroyed the ſixth day) with fever, &c. render-

How different is this from ſmall pox! Miſtakes are daily made between it and the chicken pox, and even by the moſt experienced, whereby a falſe ſecurity has been induced, which has eventually proved fatal to the deluded patient.* The ſmall pox in its moſt malignant form, differs ſo totally from the mild and diſtinct kind, that experience alone can recogniſe in them, one and the ſame diſeaſe. Theſe are ſurely reaſons for adopting the vaccine, which the ſmalleſt experience, may, without difficulty identify. The entire freedom from all anxiety, both of parents and phyſicians, in the uſe of the vaccine, might be here urged alſo, as a powerful reaſon for extending as widely as poſſible its beneficial influence.

Amidſt all that enthuſiaſm which I feel for the vaccine, I ſhall not heſitate to ſay, that I doubt not, among the many hundreds of thouſands who have paſſed through it, one, occaſionally, may be found, who may be ſuſceptible of the ſmall pox ſubſequently. In allowing this, what do the enemies of vaccination gain? In fact nothing! for where they may bring forward one ſuch caſe, properly atteſted, I can aſſuredly produce

ed it probable it had produced a conſtitutional diſeaſe; but it would not excite ſurpriſe in me to find this child ſuſceptible of the ſmall pox; and ſtill leſs in caſes where the injury is on an earlier day.

Since writing the above, I have had a confirmation of my opinion by a ſimilar fact, related to me by a phyſician, of a child whom he vaccinated: the diſeaſe progreſſed to his ſatisfaction till nearly the ſixth day; he did not ſee it again till the eighth; on the ſixth the pock was completely rubbed off; and, doubtleſs, before any conſtitutional effect could have taken place. The Doctor expreſſed himſelf diſſatisfied with it, and wiſhed to repeat the vaccination; this was refuſed, and a few months after the child died with the natural ſmall pox. Here then, we ſee the utility of viſiting our patients daily, or every ſecond day, to detect ſuch occurrences; and we may readily account for ſome of the caſes of *ſubſequent* ſmall pox in the country, where the patient is ſometimes viſited *but once a week*.

* There can be, I think, but little doubt, that many ſuppoſed caſes of ſmall pox ſubſequent to vaccination, both by inoculation and expoſure, have actually been caſes of chicken pox. Some of theſe have been accidental, but I fear ſome have been intentional, to diſcredit vaccination. We ought then to have ſome further proof than the mere aſſertion of friends and neighbours.

a dozen, nay, one hundred, of an attack of ſmall pox ſubſequently to inoculation. Here then we ſtill retain all the advantages aſcribed to vaccination over inoculation; for we certainly cannot expect the vaccine to be endowed with a greater ſecurity againſt the ſmall pox, than the latter actually poſſeſſes againſt itſelf. I might perhaps be vindicated in aſſerting, that any caſe of ſmall pox ſubſequent to vaccination, may probably be accounted for, on the ſuppoſition that the previous vaccine had affected the perſon *locally*, and not conſtitutionally; but I ſhall not ſhelter it behind ſuch a refuge. Vaccination needs it not! Its value is too ſtrongly rooted, to require ſuch a ſubterfuge; and I willingly allow the enemies of this diſeaſe to make the moſt of it. It is a tub for the whale to play with; and much good may it do him.*

I ſhall not ſay any thing reſpecting thoſe eruptions, ſores, and ſwellings, &c. which are ſaid to follow this diſeaſe. In the ſmall pox, according to my experience, they are more common, and perhaps in perſons prediſpoſed to them, any diſeaſe affecting the whole conſtitution might be equally liable to induce them. I ſhall, however, in a future paper, detail a caſe in which the vaccine unequivocally cured a patient labouring under a long continued tinea capitis, as a ſtrong inducement to employ this diſeaſe in ſimilar caſes.

* As facts have fully proved, that ſome few individuals have been ſuſceptible of the vaccine after the ſmall pox, not merely local, but conſtitutional; it certainly is not unfair to conclude, that theſe very perſons if previouſly vaccinated, might have evinced a diſpoſition to the ſmall pox, particularly by the inſertion of the variolous poiſon; which in ſome habits (of which we have inſtances on record) has even exerted its influence in a ſecond attack of itſelf.

Experiments and Obſervations on the Lehigh Coal. By JAMES WOODHOUSE, *M. D. Profeſſor of Chemiſtry in the Univerſity of Pennſylvania.*

PHILADELPHIA, *May 3d*, 1805.

SIR,

I SEND you for the Philadelphia Medical Muſeum, an account of ſome experiments made with the Lehigh coal, and the diſtinguiſhing characters of this combuſtible body.

Other inflammable ſubſtances, will, no doubt, be diſcovered in the United States, and ſhould they be ſubmitted to a proper courſe of experiments, bodies, apparently of the ſame nature, may be diſtinguiſhed from one another, important ſervices be rendered to our citizens, the arts benefited, and a foundation laid for a ſyſtem of American mineralogy.

With reſpect, I am,

Dear Sir,

Your humble Servant,

DR. J. R. COXE. JAMES WOODHOUSE.

THIS coal is found in immenſe quantities, in Pennſylvania, in the county of Northampton, near the river Lehigh. It is of a ſhining black colour, and ſtains the hands very little. Its fragments are tabular, as may be ſeen, particularly after it has been ſubmitted to heat. Its ſpecific gravity is 1,6181. It burns with very little flame, and no ſmoke; is with ſome difficulty kindled, and requires a conſiderable draught of air, to keep up its combuſtion.

When perfectly conſumed, it leaves behind, a ſmall portion of white ſiliceous earth, containing no pot-aſh, and ſometimes coloured brown, by means of iron. It does not contain any ſulphur.

Neither the ſulphuric, nitric, nor muriatic acids act upon it.

It does not take fire, when reduced to an impalpable powder, and paſſed through the flame of a candle.

A piece of it red hot, containing about eight cubic inches, was placed in forty-eight ounce meaſures of atmoſpheric air over water, and ſuffered to cool. Upon paſſing one meaſure of this air over lime water, in the Eudiometer of Fontana, it gave one per cent of carbonic acid gas. The remainder of the air, after being freed from the fixed air, was reduced in purity from 100 to 85.

One cubic inch of it, red hot, ſuſpended in ten ounce meaſures of oxygen gas, brightened very little.

The focus of an eleven-and-a-half inch lens, was directed upon a lump of it, confined in a bell-glaſs, in twelve ounce meaſures of oxygen gas, over water, when it burnt with a conſiderable flame, and nearly in the ſame manner, as the James's river coal, when a blaſt of atmoſpheric air is thrown upon it. The gas was afterwards reduced in purity, and contained fifty per cent of carbonic acid gas.

A quantity of the coal red hot, being extinguiſhed under water, produced an inflammable air, without any mixture of fixed air.

Two meaſures of this gas, and one of oxygen air, exploded by the electric ſpark, in the Eudiometer of Volta, left behind one meaſure of hydrogen gas, containing ten per cent of carbonic acid gas. Two meaſures of each of the gaſes, by the ſame means, were reduced to ſomething more than a meaſure of oxygen air, which was mixed with fifteen per cent of fixed air.

Four ounces of it, reduced to a coarſe powder, were expoſed in an earthen retort, to a red heat in one of Lewis's black lead furnaces, when it yielded three hundred and ſixty ounce meaſures of hydrogen gas, of the ſame kind as that produced by extinguiſhing it, when red hot, under water.

The ſame coal taken from the retort, and ſprinkled with water, and expoſed a ſecond time to heat, afforded thirty ounce meaſures of inflammable air, in the firſt portions of which, the carbonic acid was barely perceptible.

The ſteam of water was tranſmitted over the coal red hot, confined in a porcelain tube, and it gave hydrogen gas in tor-

rents, mixed with ten per cent of fixed air. Two meaſures of this hydrogen gas, after the carbonic acid had been ſeparated from it, and one of oxygen gas, left near a meaſure of inflammable air, mixed with fifty per cent of fixed air.

A fire was kindled at half paſt eleven o'clock, by placing a quantity of the Lehigh coal, upon a ſtratum of common charcoal in a powerful air furnace, which was then filled with equal portions of the two ſubſtances.

As faſt as the charcoal conſumed, the Northampton coal was added, and at half paſt one, the furnace was completely filled with it, and two-thirds of it red hot. At four the coal was half conſumed, and it continued burning until eleven o'clock at night.

Five of Wedgwood's thermometer pieces, put in crucibles made of porcelain, were depoſited in different places among the coal, that they might deſcend in different directions, and ſome of them be expoſed to the greateſt degree of heat.

When they were cool, being meaſured by the gauge, they gave 70, 77, 150, 156, and 159, degrees.

125 is the higheſt heat Mr. Wedgwoood could ever produce, in a common ſmith's forge, and 160 in an air furnace, eight inches ſquare. Braſs melts at twenty-one, copper at twenty-ſeven, ſilver at twenty-eight, gold at thirty-two, and caſt iron at one hundred and thirty of this thermometer. The welding heat of iron is one hundred and twenty-five.*

James's river coal, ſubmitted to an experiment of the ſame kind, burned out in four hours.

A fire was made with the Lehigh coal, in a ſmith's forge, and two thick bars of iron were placed in it, and welded with great eaſe, by the proprietor of the furnace.

The ſmith, his journeymen, and byſtanders were convinced, that the heat was much cleaner and greater, than that of the James's river coal.

* Deſcription and uſe of a thermometer for meaſuring the higher degrees of heat, by Joſiah Wedgwood. Phil. Tranſ. Vol. 72d.

As the Virginia coal burns with flame and much ſmoke, a vaſt portion of this combuſtible ſubſtance, and the heat generated by it, is loſt by paſſing up the chimney.

It appears from ſome of theſe experiments, that this coal does not unite to the baſe of oxygen gas, with as much rapidity as common charcoal, and that it decompoſes water. Its flame conſiſting of oxyde of carbon, or carbonated hydrogen gas, ariſes from this decompoſition.

When it is expoſed to a red heat, and contains little water, it gives riſe to a peculiar ſpecies of inflammable air, without any fixed air; but when the ſteam of water is tranſmitted over it, in a red heat, the production of carbonic acid gas is very conſiderable, and when the hydrogen gas, thus obtained, is fired with oxygen gas, the fixed air generated amounts to thirty-five per cent more than when it is procured from coal united to a ſmall quantity of water.

According to the opinions, now generally adopted by the Philoſophers of Europe, the gaſes, when little water is mixed with the coal, muſt conſiſt of oxyde of carbon and carbonated hydrogen gas. It will be ſaid, the oxgyen of the water, unites to part of the coal and forms oxyde of carbon, while its hydrogen eſcapes, diſſolves a portion of the coal, and makes carbonated hydrogen gas.

This explanation is far from being ſatisfactory; for no oxyde of carbon can be detected in the gaſes, produced by extinguiſhthis coal when red hot under water, or by ſubmitting it to heat in an earthen retort.

The Lehigh coal promiſes to be particularly uſeful, where a long continued heat is neceſſary, as in diſtilling, or in evaporating large quantities of water from various ſubſtances; in the melting of metals, or in ſubliming of ſalts; in generating ſteam to work ſteam engines; and in common life, for waſhing, cooking, &c. *provided the fire-places are conſtructed in ſuch a manner, as to keep up a ſtrong draught of air.*

MEDICAL AND PHILOSOPHICAL REGISTER.

FOREIGN AND DOMESTIC.

AT a ſtated meeting of the American Philoſophical Society, held at Philadelphia, for promoting uſeful knowledge, on the 19th of April, 1805.

William Tilghman, Eſq. was duly elected a member of the ſociety.

THE thanks of the ſociety are preſented to the following perſons for their *Communications* and *Donations*.

COMMUNICATIONS.

On the Italian manner of managing Silk-worms. By R. K. Lowry, received through the Preſident of the Society.

On the Manufacture of Cloth from the Fur of Seal-ſkins, accompanied with ſpecimens. By R. R. Livingſton.

DONATIONS FOR THE CABINET.

Sundry ſpecimens of minerals, chiefly from Elba. By John D. Clifford.

Specimens of lead ore and its gangue, found on Perkioming creek. By James Meaſe, M. D.

Rock cryſtal on ferruginous ſtone, from Waſhington City. By J. B. Smith, Eſq.

Engravings of the heads of Dr. Ruſh, Dr. Wiſtar, and Dr. Barton, from Mr. Haines the engraver.

Engraving (framed) of Richard Price, D. D. By Thomas C. James, M. D.

A Chineſe mariner's compaſs. By D. Davis.

DONATIONS FOR THE LIBRARY.

Medical Theſes, ſelected by C. Caldwell, M. D. 8vo. 1805. By T. & W. Bradford.

Jacob Chriſtian Schæffer's Sæmtliche Papier Verſuche, containing 84 ſpecimens of paper, chiefly made from vegetables, with obſervations on the mode of manufacturing them. By William Hamilton, Eſq.

Plan de Paris à vol d'oiſeau, gravé en 20 planches, par ordre des Echevens de la Ville, fol. 1739.

Travels in Egypt and Nubia. By F. L. Norden, 2 vols. in 1, fol. Lond. 1757. Theſe two by P. S. Du Ponceau, Eſq.

Bill of Mortality for Portſmouth, 1804. By L. Spalding.

Facts and Arguments in favour of Inland Navigation in the United States. By Camach, Eſq.

Genuine Principles of Navigation. By Mr. George Baron, of New York, 1803. By the Author.

Reports of Directors of the Cheſapeake and Delaware Canal. by J. Gilpin.

Memoirs of the Life and Correſpondence of Sir William Jones. By Lord Teignmouth. Philadelphia, 1805. By Mr. William Poyntell.

Eſſai ſur les Propriétés Médicales des Plantes, comparées avec leur formes extérieures & leur claſſification naturelle. By A. P. Decandotte.

Mathematics compiled from the beſt Authors, for the Uſe of Harvard College. By the Compiler, Samuel Webber, A. M.

Eulogy by Profeſſor Webber, on the Rev. Joſeph Willard. By the Corporation of Harvard College.

Conditions of the Magellanic Premium.

M. JOHN Hyacinth De Magellan, in London, having ſome time ago offered as a donation, to the American Philoſophical Society held at Philadelphia for promoting uſeful knowledge, the ſum of two hundred guineas, to be by them veſted in a ſecure and permanent fund, to the end that the intereſt ariſing therefrom ſhould be annually diſpoſed of in premiums, to be adjudged by the ſociety, to the author of the beſt diſcovery, or moſt uſeful invention, relating to navigation, aſtronomy, or natural philoſophy (mere natural hiſtory only excepted) and the ſociety having accepted of the above donation, hereby publiſh the conditions, preſcribed by the donor, and agreed to by the ſociety, upon which the ſaid annual premiums will be awarded.

1. The candidate ſhall ſend his diſcovery, invention, or improvement, addreſſed to the Preſident, or one of the Vice Preſidents of the ſociety, free of poſtage or other charges; and ſhall diſtinguiſh his performance by ſome motto device or other ſignature, at his pleaſure. Together with his diſcovery, invention, or improvement, he ſhall alſo ſend a ſealed letter, containing the ſame motto device or ſignature, and ſubſcribed with the real name, and place of reſidence of the author.

2. Perſons of any nation, ſect, or denomination whatever, ſhall be admitted as candidates for this premium.

3. No diſcovery, invention, or improvement, ſhall be entitled to this premium, which hath been already publiſhed, or for which the author hath been publicly rewarded elſewhere.

4. The candidate ſhall communicate his diſcovery, invention, or improvement, either in the Engliſh, French, German, or Latin language.

5. All ſuch communications ſhall be publicly read, or exhibited to the ſociety, at ſome ſtated meeting, not leſs than one month previous to the day of adjudication; and ſhall at all times be open to the inſpection of ſuch members as ſhall deſire it. But no member ſhall carry home with him the communication, deſcription, or model, except the officer to whom it ſhall be intruſted; nor ſhall ſuch officer part with the ſame out of his cuſtody, without a ſpecial order of the ſociety for that purpoſe.

6. The ſociety having previouſly referred the ſeveral communications, from candidates for the premium then depending, to the conſideration of the twelve counſellors and other officers of the ſociety, and having received their report thereon, ſhall, at one of their ſtated meetings in the month of December, annually, after the expiration of this current year, (of the time and place, together with the particular occaſion of which meeting, due notice ſhall be previouſly given, by public advertiſement) proceed to the final adjudication of the ſaid premium: and after due conſideration had, a vote ſhall firſt be taken on this queſtion, viz. Whether any of the communications then under inſpection be wor-

thy of the propoſed premium? If this queſtion be determined in the negative, the whole buſineſs ſhall be deferred till another year: but if in the affirmative, the ſociety ſhall proceed to determine by ballot, given by the members at large, the diſcovery, invention, or improvement, moſt uſeful and worthy; and that diſcovery, invention, or improvement, which ſhall be found to have a majority of concurring votes in its favour, ſhall be ſucceſsful; and then, and not till then, the ſealed letter accompanying the crowned performance ſhall be opened, and the name of the author announced as the perſon entitled to the ſaid premium.

7. No member of the ſociety who is a candidate for the premium then depending, or who hath not previouſly declared to the ſociety, either by word or writing, that he has conſidered and weighed, according to the beſt of his judgment, the comparative merits of the ſeveral claims then under conſideration, ſhall ſit in judgment, or give his vote in awarding the ſaid premium.

8. A full account of the crowned ſubject ſhall be publiſhed by the ſociety, as ſoon as may be after the adjudication, either in a ſeparate publication, or in the next ſucceeding volume of their tranſactions, or in both.

9. The unſucceſsful performances ſhall remain under conſideration, and their authors be conſidered as candidates for the premium, for five years next ſucceeding the time of their preſentment; except ſuch performances as their authors may, in the mean time, think fit to withdraw. And the ſociety ſhall, annually, publiſh an abſtract of the titles, object, or ſubject matter of the communications ſo under conſideration; ſuch only excepted as the ſociety ſhall think not worthy of public notice.

10. The letters containing the names of authors whose performances ſhall be rejected, or which ſhall be found unſucceſsful after a trial of five years, ſhall be burnt before the ſociety, without breaking the ſeals.

11. In caſe there ſhould be a failure, in any year, of any communication worthy of the propoſed premium, there will then be two premiums to be awarded in the next year. But no accumulation of premiums ſhall entitle an author to more than one premium for any one diſcovery, invention, or improvement.

12. The premium ſhall conſiſt of an oval plate of ſolid ſtandard gold, of the value of ten guineas; on one ſide thereof ſhall be neatly engraved a ſhort Latin motto, ſuited to the occaſion, together with the words——The premium of John Hyacinth de Magellan, of London, eſtabliſhed in the year 1786. And on the other ſide of the plate ſhall be engraved theſe words: Awarded by the A. P. S. ——for the diſcovery of——A. D.—

And the ſeal of the ſociety ſhall be annexed to the medal, by a ribbon paſſing through a ſmall hole at the lower edge thereof.

Surplus Magellanic Fund.

MR. de Magellan having fixed at ten guineas, the ſum to be annually diſpoſed of as a premium, according to the ſtrict terms of his donation, and the fund having been ſo managed as to produce an annual ſurplus, which has accumu-

lated for ſome years—the ſociety, with a view to promote as far as may be in their power, the liberal intentions of the donor, have determined that the ſurplus fund ſhall be employed, in the firſt inſtance, according to the ſtrict conditions of the donation, if a ſufficient number of deſerving candidates ſhall have applied for the ſame, otherwiſe, that ſuch ſurplus, or ſo much thereof as cannot be applied as above, be awarded by the ſociety to the authors of uſeful inventions or improvements, on any ſubjects within the general view of the Magellanic Donation, or to the authors of ſuch communications as may lead to ſuch inventions or improvements, and which communications may be deemed worthy of the premium. The premium to conſiſt of a gold medal of the value of not leſs than twenty, nor more than forty-five dollars, or the ſame ſum in money, at the option of the candidate, to which will be added a ſuitable diploma.

The ſociety have alſo thought proper to point out a few ſubjects to which they would wiſh to direct the attention of thoſe who may be diſpoſed to become candidates for the premium; informing them at the ſame time, that communications on other ſubjects which come within the general or particular views of the donor, will not be excluded from the competition. It is alſo neceſſary to be obſerved, that all communications for the extra premium muſt be made and tranſmitted, agreeably to the form and manner preſcribed in the conditions for the original premium.

The ſubjects the ſociety would deſignate, are,

1. The native American permanent dyes or pigments, illuſtrated by experiments, and accompanied by ſpecimens of the materials uſed, and articles coloured.

2. The beſt means of navigating the rapid rivers of North America againſt the ſtream.

3. The general natural hiſtory of the principal ranges of American mountains, in the country eaſtward of the Miſſiſſippi.

4. The natural hiſtory and chemical and medicinal qualities of the warm (hot) ſprings of the United States, or of any particular ſtate.

To the Editor of the Philadelphia Medical Muſeum.

SIR,

A FEW days ſince, Mr. Butland, of this city, put into my hands a ſpecimen of a black coloured mineral, weighing five ounces, which was found in the county of Northampton, on the farm of Mr. Weiſs, about thirty miles from Bethlehem, in the neighbourhood of the Lehigh, and informed me that it might be eaſily procured, in great quantities, at that place.

Having ſubjected this ſubſtance to a variety of experiments, it was diſcovered to be Manganeſe of the firſt quality, containing little extraneous matter; and far ſuperior to moſt of that which is ſold in the ſhops of the druggiſts, conſiderable quantities of which I have frequently been obliged to throw away after purchaſing it, from the impurity of the material.

The oxygen air obtained from this native ore, was equal in purity to that which was afforded by a ſpecimen of the foreign, ſent to me by the late Dr. Prieſtley, the diſcoverer of this gas, who informed me, that it yielded an air as pure as any he had ever procured during the courſe of his life.

Manganeſe is uſeful to the phyſician, in conſequence of the air it affords, and to which ſome of the moſt violent diſeaſes to which the human body is ſubject, have given way; to the bleacher, paper maker, and manufacturer of glaſs, as a deſtroyer of colouring matter, when combined with the marine acid; to the potter, as giving a black colour, and aſſiſting in glazing his earthen ware; and to the philoſopher and artiſt, as containing a gas, which, combined with certain combuſtible bodies, will generate a degree of heat unattainable by other means.

As the ſcience of mineralogy is little attended to in the United States, the intention of this communication is, to induce gentlemen reſiding in the country, to pay ſome attention to the mineral productions of their fields, by which means they may greatly benefit themſelves, and render the moſt important ſervices to the arts, yet in their infancy in this part of the world.

Any perſon deſirous of information, concerning any of our native foſſils, by applying to me, ſhall be gratified, as far as is in my power; and if the material ſent to me, is thought to be of any uſe to ſociety, an accurate analyſis of it ſhall be made, free of expenſe.

I am, Sir, with Reſpect,
Your humble Servant,
JAMES WOODHOUSE.

P. S. Since writing the above, I have examined another ſpecimen of this manganeſe, weighing one pound.

Two ounces of it reduced to powder, heated in an iron tube, in one of Lewis's black lead furnaces, yielded eighty cubic inches of oxygenous gas, which teſted by phoſphorus, in the eudiometer of Fontana, left behind about three per cent azotic gas.

One meaſure of the oxygen gas, paſſed up over lime water, gave a portion of carbonate of lime, barely perceptible.

One ounce meaſure of muriatic acid, heated upon one ounce, by weight, of it over water, afforded forty-five cubic inches of oxy-muriatic gas, in which leaf-copper, commonly called *Dutch metal*, immediately inflamed.

Its ſpecific gravity, taken by Mr. William Hembel, junior, at the temperature of 62° of Fahrenheit's thermometer, and before it had abſorbed water was 3.4193. After (and the abſorption accelerated by thirty minutes boiling in water), it roſe to 3.7667.

Like all the other ores of manganeſe, it is combined with iron, ſiliceous earth, &c. A deep blue precipitate takes place, upon adding the pruſſiate of pot-aſh, to a ſolution of it in the muriatic acid.

J. W.

April 26th, 1805.

The following letter from Dr. Otto, on the uſe of the vaccine ſcab, is ſtrongly in favour of the practice, and deſerves the particular attention of medical men.

April 29th, 1805.

My dear Sir,

I HAVE much pleaſure in informing you, that I have ſucceeded, at the firſt attempt, in communicating the kine pock to nineteen children in ſucceſſion; and that I was not diſappointed in one inſtance when this portion of infection was uſed. It was a primary ſcab, taken from a healthy girl eight years old, who had the diſeaſe very ſtrongly marked, having conſiderable fever for two days, a ſwelling and much pain in the ax-

illa, together with a very characteriſtic appearance on the arm. No infection had been taken from the patient, nor had the veſicle been broken, and the mahogany-coloured part alone was employed to excite the diſeaſe. Nor ſhould I omit to mention, that in conſequence of having frequently failed heretofore, I beſtowed unuſual care in performing the operation, wiping away ſeveral times, the ſmall quantity of blood that ſometimes flows from the inciſion, and endeavouring to introduce, by means of the flat ſide of the lancet, well moiſtened with the infection, a certain portion, between the lips of the diſtended wound; and to prevent any ill effects from diluting the virus, a freſh piece was uſed every time. Believing that the infection remains unaltered, as to its properties, longeſt in the form of ſcab, perhaps from its being in a large maſs, and therefore, excluded in a greater degree from the atmoſpheric air, I give it a decided preference. It would give me pleaſure to point out any circumſtance that would render the communication of the kine pock more certain, or aſſiſt in aſcertaining thoſe marks which indicate active virus.

With great Regard,
Yours,

DR. COXE. JOHN C. OTTO.

The following extract of a letter from Dr. De Carro, of Vienna, to a phyſician in London, dated October 6th, 1804, is an additional teſtimony in favour of the vaccine ſcab.

"The experiments made with the inſertion of the triturated and moiſtened vaccine cruſt ſucceed every where. Dr. Valentin of Nancy, wrote me lately, that he has produced regular puſtules in that way in twenty-three caſes. This is an important fact in the practice, which furniſhes a very eaſy method of keeping and ſending the matter for any length of time, and to any diſtance."* *Med. & Chirurg. Review.*

* To theſe I may add, that I have never been more ſucceſsful in exciting the diſeaſe, than this ſpring, during which I have almoſt excluſively uſed the vaccine ſcab. *Editor.*

Vienna, Auguſt 25th.

According to the lateſt information received by Dr. de Carro, from different phyſicians, and the governor of Bombay, it appears, that vaccination has become general in all the Britiſh poſſeſſions in India; that the neighbouring Aſiatic princes vie with each other in obtaining from them vaccine matter, in order to propagate it in their ſtates; and that hopes are entertained of ſoon hearing that it has been introduced into Tartary and Japan.

A paſſage tranſlated from an Indian Manuſcript, written by a native prince, and publiſhed in the Bombay Gazette, proves that ſome of the Bramins, many centuries ago, were not only acquainted with the cow pock, but with vaccine inoculation; that the operation was performed by means of an impregnated thread; but that it was not common, as the Bramins inoculated only thoſe children whoſe parents worſhipped the Bhowany, a female deity, the protectreſs of thoſe who have the ſmall pox. The goddeſs is generally repreſented riding on an aſs; and the father of the child to be inoculated, brings her an offering, conſiſting of corn, which he takes from his boſom, and gives to the aſs to feed upon. The ceremony is repeated as ſoon as the cow pock appears. Governor Duncan, of Bombay, has tranſmitted this information to Dr. de Carro, with a handſome letter, and a preſent of two valuable ſhawls and three pieces of moſt beautiful muſlin, for his lady. *Tilloch.*

Dr. Bremer, phyſician to the great Orphan Hoſpital at Berlin, obſerves, that in 100,000 caſes of vaccination, that have more or leſs immediately come under his cognizance, not a ſingle inſtance of ſubſequent ſmall pox has occurred: he has himſelf vaccinated more than 4,000 ſubjects. In every caſe to which he has been called, where ſmall pox was ſuppoſed to have taken place, he found it to be a ſubſequent vaccine eruption, an appearance that frequently takes place, and which

commonly dries away in about a couple of days. A more rare caſe is, he obſerves, that where, after from 8 to 12 weeks, an *ebullition* takes place in the blood, producing on the ſkin large puſtules, or veſicles, *(bulles)*, that afterwards become covered with a cruſt, which falls off, and is again renewed, during ſeveral weeks, unleſs calomel be employed, which produces a ſpeedy cure. This takes place eſpecially among the children of the poor, who have other acrimonies floating in the blood, and which the vaccine inoculation puts in motion.

Med. & Chirurg. Review.

Vaccine Inoculation.

Statement of the Number of Perſons inoculated at the Stations of the Royal Jennerian Society, in eighteen Months, from the Quarterly Reports.

Central Houſe - - -	2911	Biſhopſgate - - -	1070
Surry Chapel - - -	2110	Hoxton - - - -	816
Maze Pond, Southwark	387	Golden Lane - - -	579
Rotherhithe - - -	510	Clerkenwell - - -	245
Shadwell - - - -	512	Gate Street, Holborn	216
Mile End - - - -	516	Mary-le-bone - - -	1523
John Street, Minories	400	Weſtminſter - - -	218
Inoculated before the Central Houſe was opened -	275		
Total -	12288		

N. B. In the ſame period, 19,352 charges of vaccine virus have been ſupplied from the Central Houſe, in Saliſbury Square, free of expenſe, to applications from moſt parts of the Britiſh empire, and foreign countries.

It will doubtleſs be highly gratifying to the public, to obſerve the remarkable decreaſe of deaths by the ſmall pox, as

appears by the following comparative view, extracted from the Bills of Mortality:

January,	1803 -	181	1804	120
February	- -	121	- -	77
March	- - -	95	- -	44
April	- - -	61	- -	38
May	- - -	69	- -	88
June	- - -	48	- -	29
July	- - -	50	- -	35
Auguſt	- - -	67	- -	27
September	- -	85	- -	33
October	- - -	64	- -	50
November	- -	152	- -	45
December	- -	180	- -	50
	Total	1173	Total	586

This decreaſe will appear ſtill more important when compared with the annexed ſtatement of deaths by ſmall pox, for fifty years, within the Bills of Mortality, averaged by ten years.

From 1750	to 1759	- -	19,642
1760	1769	- -	24,435
1770	1779	- -	22,039
1780	1789	- -	17,121
1790	1799	- -	17,685
		Total -	100,922

Making an annual average of 2018 deaths per ſmall pox in fifty years.

The following is an annual ſtatement of deaths in the preſent century:

1800	- - - -	2409
1801	- - - -	1461
1802	- - - -	1579
1803	- - - -	1173
1804	- - - -	586

It is hoped the knowledge of theſe facts will be ſtrongly promotive of the beneficial practice of vaccine inoculation, it appearing that the fatal diſeaſe of ſmall pox has progreſſively declined as the ineſtimable diſcovery of Dr. Jenner has been introduced. *Medical & Phyſical Journal.*

" Poſterity will be ſurpriſed that the doctrine ſhould ever have been maintained and publiſhed, and by medical gentlemen, that the cow pock only ſecured *for a time.* It was limited at firſt to *two*, afterwards to *three*, and then to *four* years. Three children of Mr. Henry Jenner, inoculated *five* years ago, have ſince been repeatedly inoculated with variolous matter, and expoſed to the infection of the natural ſmall pox, in its worſt form, every year up to the preſent time, without catching the diſeaſe. Pead, vaccinated by Dr. Jenner more than *ſix* years, and Phipps, his firſt patient, vaccinated by him more than *eight* years ago, have been frequently put to the ſame teſts with impunity. In the ſpring of the preſent year, they were inoculated for the ſmall pox with matter in the moſt active ſtate, but they reſiſted infection.

Note to Dr. Thornton's letter on the cow pock. Tilloch.

As it is incumbent on every friend to vaccination to oppoſe as ſoon as may be, any falſe reports againſt the credit of this practice, I think it uſeful to introduce the following.

A child of Mr. Clapier, merchant of this city, having been repeatedly ſtated to have taken the ſmall pox, by inoculation, after vaccination, I called upon the phyſician who vaccinated him, and obtained from him the following certificate.

" Je ſouſſigné, medecin exercant à Philadelphie, certifie avoir vacciné deux fois l'enfant de Mr. Clapier, negociant de cette ville, dans le courant du mois d'Avril, 1802, ſans autre effet qu'une légère inflammation de peau, produite par la

piqure, qui s'eſt manifeſté des le lendemain de la vaccination, & qui a ètè ſuivie d' une petite puſtule dont la croute eſt tombée le ſixième ou le ſeptieme jour; ayant ètè bien convaincu par les ſymptomes mentionés ci-deſſus, qu'il n'avoit pas eu la vaccine, je là declaré *affirmativement* à la famille, & depuis au Dr. Wiſtar qui m'en a fait la demande avant de l'inoculer.

Philadelphie, le 18 *Decembre*, 1804.

J. A. MONGES."

Mrs. Lillibridge, who lately died of the ſmall pox, was reported to have taken it after vaccination; but on inquiry, I found ſhe had never been vaccinated.

The ſon of Mr. Emerick, baker, in Market-ſtreet, I was told, had nearly loſt his life by a ſevere attack of natural ſmall pox, after vaccination. On making inquiry of his parents, I found the boy much marked from the diſeaſe which he had caught laſt winter; he had, however, never been vaccinated, but had been inoculated for the ſmall pox when two years old, (the cicatrix of which was very conſpicuous on his arm), and had it very favourably; he then had ſeveral pock, which left marks on him; he is now about twelve years old.

I ſhall here take the liberty to introduce the following---

COMPARATIVE VIEW OF THE

VACCINE *and* SMALL-POX.*

Small-pox.	*Vaccine.*
Firſt. This diſeaſe is in the higheſt degree contagious: hence thoſe who never have had it, cannot without extreme hazard, mix with ſuch as labour under it.	As this diſeaſe is not contagious, the ſeparation of the well from thoſe who are under its influence is entirely needleſs.

* See "Practical Obſervations on Vaccination," p. 105.

Small-pox.	*Vaccine.*
Second. The eruptive fever of the Small-pox is not unfrequently attended by convulſions of the moſt alarming nature, the effects of which are often felt through life. This is even often the caſe when the ſubſequent eruption is comparatively ſmall.	None of theſe dire effects are to be dreaded in the mild proceſs of Vaccination.
Third. The numerous puſtules produced by this diſeaſe in many inſtances, in oppoſition to every attention, whilſt they exhibit by their temporary preſence, a ſight of the moſt horrid kind; are not leſs to be dreaded from their frequent disfiguration of their unfortunate victim, by the pits they leave behind.	An eruption in this diſeaſe is ſo rare an occurrence as never to be expected: And where it does exiſt, the number is ſo ſmall, as to render it of little moment.
Fourth. That attention to *diet* and to medicine, which is often neceſſary in guarding againſt the violence of this terrible diſorder, is a frequent ſource of evil, as hundreds of mothers can teſtify.	There ſeems to be ſcarcely an inſtance in which either regimen or phyſic would be requiſite in the Vaccine.
Fifth. The ſeaſon muſt be attended to in inoculating for the Small-pox, as well as the age and preſent condition of the ſyſtem; hence pregnancy and teething are invincible barriers againſt inoculation.	One ſeaſon is ſcarcely preferable to another in this mild diſeaſe: Age and exiſting circumſtances are of little moment; hence teething and pregnancy are no objections to its uſe.

Small-pox.

Sixth. The frequent, and often long continued nurſing; the extreme anxiety which all parents muſt feel, although every precaution be made uſe of, becauſe the iſſue of the diſeaſe is at all events precarious, muſt forcibly contraſt the two diſeaſes.

Seventh. The Small-pox, it is agreed, often calls into exiſtence the dormant germs of diſeaſe, or ſo alters the conſtitution of the patient, that it more readily receives ſuch impreſſions, as diſpoſe to various diſeaſes, as ſcrofula, white ſwellings, conſumption, ophthalmia, blindneſs, and many more.

Vaccine.

Nurſing, anxiety, and death are almoſt equally ſtrangers to the Vaccine. Death, we may confidently affirm, has *never* employed the Vaccine as a beſom of deſtruction.

As much as we know of the Vaccine, we find it efficacious in frequently removing many formidable complaints, and in benefiting a weakly conſtitution.

Editor.

In the autumn of 1803, about the period of the fall of the leaves, I trimmed ſome peach trees (which I had ſet out the preceding ſpring), of ſome of their ſuperfluous twigs, which were thrown careleſsly down on the border behind the trees. Theſe twigs were ſoon after covered, unintentionally, with dirt and manure, leaves of trees, &c. (which I threw over the borders) to the depth of, perhaps, ſix inches and more, ſo as to be below the depth to which the froſt penetrated during the winter. The following ſpring (1804) in digging up the borders, I turned up the twigs above mentioned, and was much ſurpriſed to find them of a rich luxuriant green appearance; ſo much ſo, as to induce a belief that if planted, they would vegetate. Accordingly I ſet about twenty of them in my bor-

ders, and was pleaſed to find that the buds of ſix or eight of them began to ſwell in a few days, before the parent ſtocks had aſſumed a diſpoſition to open. The remainder I had ſet, died, being the ſmalleſt and weakeſt of the number. Theſe ſix or eight took root, and grew very finely, till they were pulled up and deſtroyed by my children, with the exception of one, which was more concealed from view, by other plants which came up before it. This grew very finely, and ſo continued to do during the ſummer, without any particular care of mine. I expected it would probably die during the heat of ſummer, but was agreeably diſappointed, in finding it increaſe as luxuriantly as the other peach trees in my garden. This ſpring (1805) I took it up, to place it in a more convenient ſituation, and found a very fine root ſhooting deep into the ground, from the end, where it had been ſeparated from the parent tree. Several vigorous lateral roots alſo had ſhot out from above this part to its exit from the earth. It is now growing very finely, and would have been about thrice its original length, had I not cut off the upper part, which had died to nearly a foot in length, from the ſeverity of the winter's cold.

This is, as far as I know,* a new fact in the cultivation of the peach tree, and may, perhaps, lead to ſome uſeful improvement of this valuable tree. It appeared to me, the root was much ſtronger than it exiſts in young trees cultivated from the ſtone, which is of ſome conſequence, as it may not be ſo readily deſtroyed by the worm, as when the root is more tender. It poſſeſſes alſo the advantage of not requiring a ſucceſſion of ſtocks to graft on, as it muſt doubtleſs poſſeſs all the properties of the tree from which it is taken, and perhaps may be found to bear fruit at an earlier period. Experiment will eaſily aſcertain the moſt favourable period for raiſing the peach from

* Since writing the above, on mentioning the fact to a gentleman of my acquaintance, he informed me that the propagation of the peach from cuttings, by a clergyman in England, had ſucceeded; though nineteen of twenty died in the attempt. The fact, however, related above, may, perhaps, ſerve to throw ſome light on the beſt method of effecting ſo deſirable an end.

cuttings, as well as all the circumſtances neceſſary to inſure ſucceſs. It is with a view to this point, that I have thought a ſtatement of the fact might prove uſeful. *Editor.*

There exiſts in the animal economy ſeveral inſtances of the influence which takes place between organs that are not contiguous to one another; one of the moſt remarkable inſtances of this kind is the ſympathy which ſubſiſts between the teſticles, and the organs of voice. The larynx is obſerved to develope itſelf in ſeveral animals during the rutting ſeaſon, and the ſmallneſs of the larynx, the narrowneſs of the glottis, and the ſhrill voice, coincide with the ſtate of the inactivity which the teſticles ſhow before the approach of puberty. This period however being arrived, the organs for ſeminal ſecretions are developed, and become active, while, at the ſame time, the larynx rapidly increaſes in males, and the voice takes that grave ſound which makes one of the characters of virility. But, on the contrary, when the teſticles are cut away before this period, the ſource of the phenomena which characteriſe it vaniſhes, and the organs of voice remain in a ſtate of imperfection. Mr. Dupuytren has lately had an opportunity of confirming the juſtneſs of the obſervation by diſſecting the larynx of a man who had been caſtrated in his infancy, as he found this organ to be one-third leſs than it is met with in moſt men of the ſame age and habit. The glottis was very narrow, and all the organs of voice rather reſembled thoſe of a woman, or a youth before the period of puberty. *Medical and Phyſical Journal.*

Mr. Buchholz has made ſome experiments on the hydrargyrus muriatus mitis (mercurius dulcis). The common method of preparing this ſalt is by ſublimation of ſeven parts of mercury and three parts of oxygenated muriat of mercury; the precipitation adopted by Scheele having been laid aſide, becauſe apo-

thecaries are of opinion that this production on being mixed with lime water or alkaline ſolutions does not ſufficiently blacken thoſe ſubſtances. The author, therefore, examines whether theſe productions be really different from one another. For this purpoſe equal parts of mercury and of nitric acid are mixed together, and left for ſome time in the cold; it is then expoſed to a gentle heat in a ſand bath till it begins to boil, after which the liquor is poured, whilſt hot, into a ſolution of muriat of ſoda, that contains equal parts of this alkali, and mercury. The precipitate obtained by water ſaturated with ſal ammoniac or muriat of ammonia, is boiled and carefully waſhed; a copious production is obtained; and the author proves, by a ſeries of experiments, that it does not differ from that obtained by corroſive ſublimate; this method alſo appears to him more advantageous, and leſs dangerous than that by ſublimation.

Ibid.

M. Portalez, a phyſician of Anduſe in France, relates a caſe that lately occurred in a village in France, where death took place in a child ſix years of age, from the application to the head of arſenic mixed with olive oil, for the purpoſe of deſtroying vermin. A few hours after the application had been made, the child was ſeized with violent pain in the head, with frequent vomiting. A general ſwelling came on over the body, and the ſkin was covered with ſpots of a violet colour; the pulſe became weak and creeping; a cold and clammy ſweat broke out on the head and cheſt, with convulſive motions of the muſcles of the face. Death took place in a few hours.

Med. & Chirurg. Rev.

Dr. Andrew Ferguſon of Aberdeen, ſtrongly recommends the ſulphat of ſoda poultice in chancre, and its efficacy is confirmed by Mr. T. Peaal.---Dr. Ferguſon relates its ſucceſs in a

caſe which reſiſted the ſtrong mercurial ointment, alone, and combined with calomel, &c. &c. The poultice is thus made—one ounce of ſulphat of ſoda was diſſolved in 4 pounds of boiling water, and when perfectly cold, a little of this water was mixed with a ſmall piece of the crumb of white bread, and kneaded with the fingers to the conſiſtence of a ſoft poultice. This was applied ſix times a day, and in two days a change of appearance took place, with conſiderable abatement of pain, and the chancre gradually healed up.---In more than twelve caſes it was equally ſucceſsful. The Doctor thinks this poultice tends to prevent the abſorption of the ſyphilitic poiſon, at the ſame time that it produces a change in the action of the part. A much ſtronger ſolution proved effectual in two caſes of herpes. In gonorrhœa he found the above poultice diſſolved to a thin mucilage highly uſeful, and he conſiders it as among the firſt injections that have been diſcovered.

Ibid.

An officer many years in the army in the Eaſt Indies, being ſtruck with Mr. Churchman's ideas, of reducing to a ſyſtem all the changes of the land gaining on the ſea, and the contrary, which are gradually carried on throughout the world, requeſts us to make known a few facts which correſpond with the Aſiatic Reſearches. He was acquainted with a lady, who died at Madraſs in the year 1797, at the advanced age of ninety-ſix years, who uſed to ſay that the ſea had encroached there about three Engliſh miles, within her remembrance; that ſome years ago a row of cocoa-nut trees ſtood at the place where the ſhips now ride at anchor. From the time he left India, in 1794, until his return there in 1799, the ſea had encroached ſo much as to cauſe the beach-houſe belonging to the cuſtoms, which ſtood at the ſouth end of the fort, to be removed three miles to the north of it, and that the ſea at that place continued to encroach gradually upon the land every year.* *Tilloch.*

* Travellers inform us, that the ruins of ancient Carthage are to be ſeen many feet below the ſurface of the water on that part of the African coaſt where it was

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Profeſſor Veau-de-Launay, in a letter to J. C. Delametherie, gives the following account of an accident with fulminating ſilver, in his laboratory.

" I had employed one of my pupils, a very good operator, to prepare a ſmall quantity of fulminating ſilver, which he executed with ſkill.

The quantity obtained was about five grains, or a quarter of a gramme: it was depoſited in a cryſtal capſule, about two lines in thickneſs. He had taken a ſmall quantity, about half a grain, which was ſeparated with a card, and then dried, and afterwards detonated by ſlight friction. Next day, that is to ſay 24 hours after the preparation, this young perſon was deſirous of taking an equal quantity from the capſule to repeat the experiment, but he had ſcarcely touched the preparation with the corner of a card, when a violent detonation and exploſion took place in the capſule, which was ſhattered into a thouſand pieces. His face was covered with the vaporiſed preparation, which was almoſt black, and adhered ſtrongly to the ſkin; his eyes experienced a ſtrong ſhock, which produced extreme pain; the opaque cornea became red and inflamed. Happily his fear was the greateſt evil: by waſhing and bathing his eyes and face frequently with cold water, the effects of the detonation were ſoon diſſipated.

Fortunately, none of the fragments of the glaſs had touched his eyes or his face; they were thrown nearly in a horizontal

ſituated, and over which ſhips of conſiderable ſize now ſail without danger. The following, extracted ſome years ago from a newſpaper, ſhews a ſtill greater encroachment of the ſea upon the land.

" Though much has been lately ſaid of the ſea's gaining upon the town of Dunwich, in Suffolk, its approaches upon the Yorkſhire coaſt are by no means leſs viſible. Upon the tower of Hornſey church, near a ſmall village within nine miles of Burlington, there is a ſtone with this inſcription:

" Hornſey church! when I built thee,
Thou waſt nine miles from the ſea,
Nine miles from Burlington, and nine from Beverley.

This Hornſey church is now but one mile and a half from the ſea." E.

direction, to a conſiderable diſtance: ſome were thrown upwards of 12 feet.

As the effects of this preparation may have more calamitous conſequences, I think it uſeful to be guarded againſt the dangers which it may occaſion.

Nicholſon's Jour.

SUSPENDED ANIMATION.

As the means of reſtoring ſuſpended animation, cannot be too widely diffuſed, nor too frequently repeated, it is conceived the following obſervations from the Royal Humane Society may, with great propriety, be introduced into this work.

Editor.

THE DROWNED.

1. WHAT THOU DOEST,---DO QUICKLY.

2. HUMANE PERSONS *are earneſtly* requeſted to prevent the *drowned being rolled on caſks*, or any violent means employed.

3. On perſons being drowned, or ſuffocated, ſend to the *Receiving houſe.* Order ſpirits, flannels, &c. to be in readineſs.

☞ *Directions for the reſtoration of the drowned; thoſe ſuſpended by the cord; intenſe cold; or tremendous lightning.*

1. Convey carefully the body, with the head raiſed, and ſend to the neareſt medical aſſiſtant.

2. Strip, dry the body; clean the mouth and noſtrils.

3. YOUNG CHILDREN to be put between two perſons in a warm bed.

4. An ADULT. Lay the unfortunate perſon on a bed, and in cold weather near the fire. In ſummer expoſe the body to the rays of the ſun; and air ſhould be freely admitted.

☞ 5. The body to be gently rubbed with flannel, ſprinkled with ſpirits, flour of muſtard, &c. alſo *a heated warming pan*, properly covered, may be lightly moved over the back and ſpine.

6. To RESTORE BREATHING.

Introduce the pipe of a bellows, (when no apparatus is at hand,) into *one* noſtril; the *other*, and the mouth being cloſed, *inflate the lungs*, till the breaſt be a little raiſed; the mouth and noſtrils muſt then be let free: THIS PROCESS, to be repeated till the return of life.

7. The BREAST to be fomented with *hot ſpirits;* warm bricks or tiles covered, &c. to be applied to the ſoles of the feet, and palms of the hands.

8. TOBACCO SMOKE is to be thrown gently into the fundament with a proper inſtrument, or the bowl of a pipe covered, ſo as to defend the mouth of the aſſiſtant.

9. ELECTRICITY to be early employed either by the medical aſſiſtants, or other judicious practitioners.

SALT NEVER TO BE EMPLOYED. See 5th head.

INTENSE COLD.

Rub the body with *ſnow*, *ice*, or *cold water*. *Reſtore warmth by ſlow degrees:* if life does not ſoon return, the proceſs of the drowned muſt be employed.

SUSPENSION BY THE CORD.

1. A few ounces of blood taken from the jugular vein; cupping-glaſſes applied to the head and neck; leeches alſo, to the temples.

2. The other methods of treatment, the ſame as recommended for the apparently drowned.

NOXIOUS VAPOURS.

COLD WATER, to be repeatedly thrown upon the face, &c. drying the body by intervals.

If the body feels cold, employ gradual *warmth*, and the plans for reſtoring the drowned.

INTOXICATION.

The body to be laid on a bed, with the head raiſed; the neck-cloth, &c. removed.

Obtain immediately MEDICAL ASSISTANCE, as the *modes of treatment* muſt be varied according to the circumſtances of the patient.

RETURNING LIFE.

THE RESUSCITATING PROCESS ſhould be applied in a more gentle and cautious manner. Stimulants, &c. on the return of animation are now only to be employed with a view to aſſiſt and ſtrengthen languid vitality.

ROYAL HUMANE SOCIETY.

Honorary Premiums and Pecuniary Bounties, adjudged in March 1806.

ESSAYS, DISSERTATIONS, and MODELS, on the following Queſtions:

1. What are the beſt means of preventing Shipwreck?

2. What will be the moſt probable means of keeping the Veſſels afloat, if they ſpring a Leak, or are in extreme danger?

3. The moſt certain methods of conveying aſſiſtance from Shore to Veſſels in Diſtreſs, within a certain diſtance of Land, and when Boats dare not venture to their aid.

For the Firſt in point of merit, An honorary Gold Medal.---*The ſecond*, A Silver Medal.----*The Third*, Ten Guineas.----*The fourth*, Five Guineas.----*The fifth*, Three Guineas.

REGULATIONS.

1. The Models, Drawings, and Eſſays to be tranſmitted to Dr. HAWES, *with ſome Device on the Outſide*, and, *within*, the Name of the Author.

2. The Determination of their Merits will be veſted in an appointed Committee.

3. The SUCCESSFUL ESSAYS will be publiſhed by the SOCIETY; the others returned to their reſpective Authors.

Signed, by Order,

JOHN BEAUMONT, Reg.

The following method is propoſed for obtaining phoſphorus as preferable to any other in point of facility, neatneſs and ſimplicity.

" To one pound of phoſphate of ſoda, value two ſhillings and ſix-pence, (ſterling,) add one and a quarter pounds of acetite of lead, value three ſhillings; above one pound of phoſphate of lead will be immediately precipitated, and about one pound of acetite of ſoda may be eaſily obtained by evaporation. If this ſhould be valued at two ſhillings and ſix-pence, the original coſt of the ingredients will be reduced to three ſhillings, add one for fuel and labour, and two ounces of phoſphorus will be procured for four ſhillings.

Nicholſon's Journal.

A very curious experiment has been lately repeated before the National Inſtitute. If the air be very rapidly compreſſed in the ball of an air-gun, a conſiderable quantity of heat is diſengaged from the firſt ſtroke of the piſton, which is ſo great that it is capable of ſetting fire to a piece of fungus match (amadou) placed within the pump. If the body of the pump be terminated by a moveable end formed of a piece of ſteel firmly ſcrewed in, and furniſhed in its centre with a glaſs lens, which admits of the inſide being ſeen, at the firſt ſtroke of the piſton, a ray of vivid brilliant light will be perceived, which is ſuddenly diſengaged.

This obſervation is owing to accident; it was made for the firſt time by a workman in the manufacture of arms of St. Etienne, who, on diſcharging an air-gun in which the air was ſtrongly compreſſed, perceived a very ſenſible light at the end of the barrel. *Ibid.*

Mr. Strauſs, who has made a number of good experiments on platina, has ſucceeded in applying this metal to defend the face of copper. The ſolution of platina was precipitated by muriate of ammonia, then waſhed and dried, and expoſed to

a graduated red heat for half an hour in a covered crucible. The product was a grey coagulated powder; conſiſting of metallic platina in a ſtate of extreme diviſion. One part of this powder with three parts of mercury did not combine by half an hour's trituration; but upon adding two parts more of mercury, and ſlightly heating the mortar, he ſoon obtained a tenacious amalgam, which was rendered very ſoft by the addition of two other parts of the laſt-mentioned metal.

A ſmall quantity of this amalgam was rubbed upon a plate of copper, which became completely covered. The plate was then ignited, and was found to have retained a coating of platina. In the next place, he mixed a little of the amalgam with chalk, ſprinkled the mixture with water, coated the plate of copper a ſecond time, and again ignited it. The coating was now found to be very perfect, and aſſumed a ſhining ſilver colour under the burniſher.

This chemiſt remarks that his application of platina to copper veſſels muſt be ſuperior to that of tin; not only in its reſiſtance to acids and ſaline matters, but in its durability, from the greater hardneſs of platina; and he adds that the proceſs here deſcribed is not more difficult to be effected than the common operation of tinning. *Ibid.*

The following extraordinary inſtance of longevity is given in a late German journal. There is now living near Poloſk, on the frontiers of Livonia, a Ruſſian who ſerved under Guſtavus Adolphus, king of Sweden. He was preſent at the battle of Pultawa in 1709, at which time he was 86 years of age. At the age of 93 he entered into the married ſtate, and had children. The family of this patriarch conſiſts of 186 individuals, who reſide together in a village which comprehends ten houſes. The oldeſt of his grand children is 102; the age of the next is not leſs than a century. This old man ſtill enjoys a perfect ſtate of health, though now 180. *Tilloch.*

A man lately died at Gloves, near Athewry, in Ireland, aged 117. He retained his faculties to the laſt, and, three weeks before his death, walked twenty-ſix miles. He read the ſmalleſt print without glaſſes. He married ſeven times; the laſt when 93 years of age. By his different wives he had 48 children. His deſcendants by theſe were 236 grand children, 944 great grand children; and 25 great great grand children, the oldeſt of whom is four years old. His youngeſt ſon by his laſt marriage is now about 18. *Ibid.*

Mr. Weſtring, of Norkoping, in Sweden, in a letter to Mr. Bergman, at Paris, ſays: "Tell M. Vauquelin that I have found that the inner bark of the *Pinus ſylveſtris* acts in the ſame manner as yellow Quinquina *(Cinchona regia)*, and that for two years I have made uſe of the powder of this bark with the ſame advantage as Quinquina, and that, in certain caſes, it is even of ſuperior utility." *Ibid.*

"The eruptions of Mount Veſuvius have ceaſed. The following fact may deſerve the attention of naturaliſts:----The Engliſh ſhip of the line which lies before Naples, changing its poſition during the time of an eruption, one of the anchors, when drawn up, was found to be ſo hot that the ſailors could ſcarcely touch it. Does not this prove that the principal ſource of the Volcano is under the ſea?" *Ibid.*

A curious phenomenon is mentioned by Dr. Erdman, of Dreſden, which was produced by the paſſion of anger in a boy of a delicate complexion, light hair, and a ſanguine temper. During the paroxyſm, one half of his face would become quite pale, whilſt the other was very red and heated, and theſe two colours were exactly limited by a line, running down the middle of the forehead, noſe, lips, and chin: when heated by violent exerciſe of any kind, the whole face became equally red.

Medical and Phyſical Journal.

A foreign journal ſtates, that, at Hellonges, in the canton of Thullen, department of Jemappe, a living toad was lately found incloſed in a vein of pit coal, between two maſſes of rock ſix hundred feet below the ſurface. It was eighteen inches long, and was found alive, but died as ſoon as expoſed to the air.

Tilloch.

A letter from Mr. J. Walker, of Heage, to Mr. Drury, printer of the Derby Mercury, mentions, "that a large living toad was lately found by a labourer at Crich, (Derbyſhire), in the middle of hard ſolid ſtone, without any viſible aperture by which it might get there, and which died immediately after it became expoſed to the air." *Month. Mag.*

Under the article of "provincial occurrences" it is ſtated, that "a gentleman lately angling in the river Sleddu, (county of Cornwall), caught, with a natural fly, a trout ſeven inches in length, with *two* heads; in every other reſpect it reſembled an ordinary fiſh of that ſpecies." *Ibid.*

The oliferous China radiſh, the *raphanus Chinenſis annuus oliferus*, is much cultivated in Piedmont and the Milaneſe. From three and a half ounces of ſeed, a farmer obtained a produce of five hundred and eighty-three pounds, which yielded two hundred pounds weight of oil. The Chineſe extract from the ſeed one half its weight in oil. It is employed by the Italians for culinary purpoſes, burns without emitting any ſmoke, and gives light as clear as common oil. In the Milaneſe, the ſeed is ſown in March, the land having been ploughed in autumn, and again before the ſeed is ſown, but not manured. The plants are to be thinned to the diſtance of three or four inches from each other.

Ibid.

The following method is employed in Germany and Sweden for making artificial Yeaſt. To 100lbs. of the beſt malt, conſiſting of one part of malted wheat and two parts of malted barley, dried in the open air, and well ground and bruiſed, add 10lbs. of good hops, and brew the mixture with 350lbs. of water to form wort. After a ſhort boiling ſeparate the grains and hops from the wort; which laſt, by continued boiling, may be reduced to 175lbs. Cool it down as ſoon as poſſible to 70° of Fahrenheit, and then mix it with 32lbs. of yeaſt; the firſt time may be of common brewers yeaſt, but in every ſubſequent operation, of the artificial. The wort will ſoon ferment, and in a few hours it will be covered with a thick yeaſty froth; the whole maſs muſt then be ſtrongly agitated, and at the ſame time well mixed with from 50 to 75lbs. of fine ground meal, of wheat or barley, malted or unmalted. In a cool place this yeaſt will keep ten or fifteen days in ſummer, and four or five weeks in winter. It is ſaid to be as good as the beſt common yeaſt for the uſe of brewers, diſtillers, bakers, and paſtry cooks.

Univerſal Magazine.

An intereſting account of "the ſtate of the Briſtol Aſylum for the *indigent Blind*," is given in the Monthly Magazine, by which it appears that the total ſum of the donations to the 31ſt Dec. 1802, was £2,278 5 7. Annual ſubſcriptions £240 8.

The ſociety received to the ſame date for baſkets, made by the blind perſons, - - - - £390 5 5
For white rods, - - - - 35 2
For cloth and laces, - - - - 13 12 1

£438 19 6

This is a moſt invaluable inſtitution, where theſe hitherto unfortunate dependents upon their fellow creatures, "are taught

to practiſe arts by which, with honeſt induſtry, they may, in independence and honour, earn a ſubſiſtence for themſelves."*

The uſual proceſs of blaſting rocks with gunpowder is, after drilling a hole, and charging it with powder, to introduce a wire or ſmall rod, to preſerve a communication with the fuzee, and then to ram up the remainder of the hole with ſtone pulverized by the operation of ramming it; after which the wire is withdrawn and the priming introduced. Inſtead of this tedious operation, which is often attended with danger, the blaſting may be effected by introducing a ſtraw filled with fine gunpowder, and then filling the hole with ſand.

Experiment: Mr. JESSOP cauſed a hole, one and a half inch in diameter, and twelve inches deep, to be bored in a knotty piece of oak, twenty inches in diameter; he charged it with three inches of powder, and upon it was laid four inches of ſand, which ſplit the wood, with great violence, into ſix pieces.

Month. Mag.

From the account which has been publiſhed of M. GAY LUSSAC's ſecond aërial excurſion, at Paris, we are informed that he aſcended 21,600 feet above the level of the ſea; that at the height to which he attained, the magnetic power underwent no variation. The chemical properties of the air, its weight excepted, remained the ſame, and the heat of the atmoſphere diminiſhed, as he aſcended, very nearly in an arithmetical progreſſion. *Ibid.*

* When in Edinburgh, I attended ſome lectures on Chemiſtry, which were given by Dr. Moyſe, (a blind Philoſopher, who formerly delivered lectures in this city on natural philoſophy,) in aid of an eſtabliſhment for blind perſons.—Such an eſtabliſhment might be eaſily formed in every large city; and many, now, helpleſs beings, might thereby be enabled to aſſiſt themſelves and families, inſtead of being a complete burden upon their friends or the public. It is not long ſince I witneſſed the induſtry of a blind man, who was buſily engaged in ſawing wood, which his wife lifted for him to his horſe, and when cut, threw it into the cellar. *Editor.*

NEW PUBLICATIONS.

CAUTIONS to young perſons, concerning health, in a public lecture, delivered at the cloſe of the Medical Courſe, in the chapel, at Cambridge, Nov. 20, 1804; containing the general doctrine of chronic diſeaſes: ſhewing the evil tendency of the uſe of tobacco upon young perſons; more eſpecially the pernicious effects of ſmoking cigarrs; with obſervations on the uſe of ardent and vinous ſpirits in general. By Benjamin Waterhouſe, M. D. Profeſſor of the Theory and Practice of Phyſic, and Teacher of Natural Hiſtory in the Univerſity of Cambridge, 1805, W. Hilliard.—8vo. pp. 32.

THIS lecture was delivered to the ſtudents of the Univerſity of Cambridge, for the beſt of purpoſes, that of calling their attention to the important, though much neglected, conſequences of diſeaſe, excited by a variety of ſources, either alone, or in combination. The influence of theſe ſources, in producing dyſpepſia "the grand inlet to all chronic diſorders" is well depicted, and, we ſhould hope, would have that proper effect on the perſons to whom the lecture is addreſſed, which its benevolent author intended it to produce.

It appears to us, however, that the worthy Profeſſor has extended his arguments too far, in oppoſing ſo generally, the uſe of tobacco. They are, no doubt, very juſt, as applied to its uſe at ſo early a period, as that, at which it is ſo commonly taken up; or in the extreme degree to which ſome of the more advanced ſlaves to the cuſtom, have ſometimes carried it; but we muſt not oppoſe the uſe of any thing, from the abuſe to which it may be liable;—as there is nothing ſo innocent in itſelf, which might not in like manner be reprobated. We do not however profeſs to be an advocate for the cuſtom, although we occaſionally *indulge* in it; for we are well convinced it may be omitted with advantage, as, at beſt an uſeleſs habit: and we ſincerely unite with the author in wiſhing, that his well-meant en-

deavour to oppoſe its uſe in the younger part of the community, may prove ſucceſsful; for we fear, among the more advanced it will be conſidered, (as tea was formerly,) a *ſlow* poiſon, which, in moderation, may be ſafely perſevered in, to the utmoſt limits of life.

A TREATISE on Fractures, Luxations, and other affections of the bones, by P. J. Deſault, ſurgeon in chief to the Hotel-Dieu of Paris, wherein his opinions and practice, in ſuch caſes, are ſtated and exemplified. Edited by Xav. Bichat; with plates. Tranſlated from the French, by Charles Caldwell, M. D. with notes, and an appendix containing ſeveral late improvements in ſurgery. Philadelphia. Fry and Kammerer, 1805. 8vo. pp. 413.

To thoſe, who are acquainted with the juſtly acquired celebrity of Deſault as a ſurgeon, this work moſt prove highly acceptable. The many valuable improvements he has introduced both in the theory and practice of luxations and fractures, cannot but give it a juſt claim to the particular attention of every ſurgical practitioner throughout the United States.

In the preface to this treatiſe, the tranſlator ſtates, that he "is far from affirming, that he has in no inſtance deviated from the meaning of his original. To hazard an aſſertion like this, would be aſſuming to himſelf more than is conſiſtent with modeſty, or, perhaps, with truth. He truſts, however, that ſuch deviations are very rare, that if they do occur they are but ſlight in themſelves, and never connected with facts or principles of practical importance. He can, at leaſt, very confidently declare, that they have never been the offspring of careleſsneſs or deſign."—Whilſt we give every credit to the intentions of the tranſlator, we however think it a duty to point out an error, which has eſcaped him, and which we muſt conſider of ſome conſiderable "practical importance," inaſmuch as it appears to us to be the very oppoſite of the original text. The part we allude to, is at page 33 of the tranſlation, which we are

informed in a note, "is ſo obſcure in the original, that a tranſlation of it would be ſcarcely intelligible. Inſtead of a mere tranſlation, therefore, I (*the tranſlator*) have given rather a comment on what I believe to be its true meaning." But, leſt we ſhould miſtate the idea we entertain, it may be proper to give the original, and the tranſlation itſelf.*

From the view of the text, and the tranſlation, below, it appears to us that the words "De ſerrer très-peu la troiſieme bande" implies juſt the reverſe of the tranſlation, "by drawing the third roller a little tighter than uſual:"—From the whole of the deſcription previouſly given of the application of this third roller, it evidently appears, that by drawing it tighter than uſual, its very indication will be deſtroyed; for, by ſo doing the elbow muſt be raiſed, and thus carry with it the humerus and the portion of fractured clavicle connected with it; which of courſe prevents that cloſe union of the fractured extremities, which the whole of Deſault's bandage is ſo admirably adapted to ſecure. The meaning appears to be, that the third roller is to be very little tightened, (très-peu). Its action is that of a mere ſling to ſupport the elbow, but not to raiſe it. But this muſt inevitably follow, if the tranſlation is purſued.

* "XLI. Le Bandage varie peu dans les cas infiniment rares, comme le remar que Hippocrate, de la ſallie du fragment externe ſur l'interne, deux grandes indications reſtent toujours a remplir: porter le bras en arrière et en dehors. Il ſuffit, pour ne pas le deriger en haut, 1° de ne pas élever le coude dans l'application de l'appareil; 2° *de ſerrer très peu la troiſieme bande.*"

Œuvres Chirurgicales, &c. Tom. 1, p. 85.

"42. In thoſe caſes (which, as Hippocrates remarks, very rarely occur, where the external fragment projects over the internal one (12), the bandage muſt be ſomewhat varied, although the two principal indications, of drawing the ſhoulder backward and outward, muſt ſtill, as in other caſes, be fulfilled. The only additional circumſtance, therefore, neceſſary to be attended to here, is, not to elevate the ſhoulder, by puſhing it upwards. This may be eaſily avoided, 1ſt, by omitting to raiſe the elbow, when applying the bandage; 2dly, *by drawing the third roller a little tighter than uſual.*"

The parentheſis does not occur in Default's treatiſe, and, the numbering will be found wrong, owing to the commencement of the Memoir (II.) being conſidered as the firſt ſection whereas the firſt ſection of Default is the ſecond of the tranſlator.

Editor.

Not having time to compare the tranſlation generally with the original, we muſt omit any thing further on this head, and proceed to make a few obſervations on another part of the preface, to which we cannot give an unqualified aſſent.

"Several French practitioners," ſays the tranſlator, "in projecting improvements on the forms of apparatus of Deſault, have evidently rendered them more complex, more expenſive, and therefore more difficult to be conſtructed or procured, without adding in the ſmalleſt degree to the efficacy of their action. This is particularly the caſe with reſpect to Boyer, in his attempt to ſubſtitute a new apparatus for a fractured clavicle, in place of that invented by Deſault. The latter, can be conſtructed in a very few minutes, by the ſurgeon or one of his aſſiſtants, without any expenſe, whereas the former muſt be made by a workman employed for the purpoſe, and is neceſſarily attended with both coſt and delay. Nor is it always practicable, particularly in the country, to procure a workman capable of making this apparatus. But this is not all. On Deſault's plan, the ſame apparatus for a fractured clavicle will fit, and may be applied to, perſons of different ſizes and figures; whereas, on the plan of Boyer, each patient muſt have an apparatus conſtructed particularly for himſelf. No practitioner, therefore, can heſitate a moment in deciding to which of theſe two forms of apparatus the preference is due."

However much we are diſpoſed to admire the improvement, which Deſault's bandage for a fractured clavicle evinces, yet, with deference to the Editor, we cannot but confeſs, that, in our judgment, Boyer has at leaſt equalled him. Having taken the pains to ſee them both fairly applied at the ſame time to two different perſons, we are compelled to give the preference to that of Boyer, both from the facility of its application, and from its not requiring ſuch frequent re-applications; as it is leſs liable to diſplacement by the motions of the patient. To the objection, that, on Boyer's plan, "each patient muſt have an apparatus conſtructed particularly for him-

ſelf," this is altogether obviated by an improvement on the apparatus, by Mr. Hartſhorne, apothecary at the Pennſylvania Hoſpital; who is now engaged in editing an edition of Boyer's work, in which his improvement is particularly ſtated. By this, the apparatus may be moſt conveniently adapted to any patient. It poſſeſſes alſo a material advantage, that it may be applied in caſe of fracture of both clavicles, with as much facility as to one only: which is not the caſe with the apparatus of Default. Though ſuch an occurrence is not very likely to take place, yet it muſt certainly give it a ſuperiority.

We cannot ſay as much for Boyer's apparatus for making a permanent extenſion in fractures of the lower extremities. In theſe, Default's is certainly preferable, eſpecially as it has been improved by Drs. Phyſick and Hutchinſon; which improvements are here detailed by Dr. Caldwell in an appendix to the work—and may be alſo ſeen in a paper of Dr. Hutchinſon's at page 187 of this muſeum.

At page 293, the editor has given us the hiſtory of a caſe of luxation of the head of the femur in a forward direction, occurring under the care of Dr. Phyſick in the Pennſylvania hoſpital; in which, in pointing out the difference between Deſault's practice and that of Dr. Phyſick, he informs us, that Dr. P. placed the ſtrap intended for extenſion, above the knee. This is certainly correct, but, in fact, the reduction was not accompliſhed, until the bandage round the limb, to which the ſtrap was affixed, had ſlipped below the knee, by which the power of extenſion was greatly augmented, and was, beyond doubt, a very important alteration in favour of the patient.*

In the appendix, we have alſo related, from the Medical Repoſitory, "Dr. Phyſick's new and ſucceſsful method of treating an old and obſtinate fracture of the os humeri," by a ſeton paſſed between the fractured extremities of the bones. This, no doubt, has already been peruſed with the avidity it merits,

* For a particular hiſtory of this caſe, ſee Dr. Phyſick's account of it, accompanied with a plate of the method purſued, in the preſent Number.

by every practitioner, who has the opportunity of seeing the Medical Repository.

Should the price of this work (2 dollars and 50 cents) not impede its circulation, there can be no doubt that it may prove essentially serviceable.

THE CONNEXION of life with respiration, or an experimental inquiry into the effects of submersion, strangulation, and several kinds of noxious airs in living animals; with an account of the nature of the disease they produce; its distinction from death itself; and the most effectual means of cure. By Edmund Goodwyn, M. D. Philadelphia—Cist, 8vo. 1805, p. 61.

This excellent treatise, which obtained for Dr. Goodwyn a prize medal from the Humane Society in 1788, is now presented for the first time in an American edition. Its merits have long since received the sanction of an approving public; and we have only to express our wishes, that a continuation of such valuable works may be insured, by that encouragement which our printers may reasonably expect.

The Philadelphia Medical and Physical Journal. Collected and arranged by Benjamin Smith Barton, M. D. professor of Materia Medica, Natural History and Botany, in the university of Pennsylvania.—Part 2. vol. 1. Philadelphia. 1805.—8vo.

The lectures of BOYER upon the diseases of the bones, with an appendix by Joseph Hartshorne, are now in the press, and will be published in July next. Subscriptions to this work are received by James Humphreys, at the corner of Second and Walnut streets, Philadelphia, and by the Editor at the Pennsylvania Hospital.

DEATH.

At St. Andrews, (Scotland), John Rotheram, M. D. F. R. S. Ed. Professor of Natural Philosophy, in that University. For several years before the death of Dr. Black, of Edinburgh, he was chosen by that celebrated Chemist, his assistant, in his public lectures.

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NOTICE TO CORRESPONDENTS.

Communications are received from Drs. Dewees, Smith, Watkins, Ffirth, &c. which will appear in the next Number.

☞ *Gentlemen, who are desirous of announcing the various lectures in the different Universities, &c. are requested to forward their notices immediately to the Editor, to be in time for the next number, which will probably appear early in August; as it is contemplated to conclude the second Volume, by the period the Medical Classes terminate in Philadelphia. For the same reason, any communications intended for the Museum, will be particularly desirable as early as possible.* *Editor.*

ERRATA.

In page 273, line 8—for *inability*, read *irritability*.

In page 384, second line from bottom, for *entertained*, read *contained*.

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